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in this issue . . .

- **Politics and the Businessman.** Some vigorous company programs have been developed, and others are in the making, to encourage executives to take a more active role in political affairs. But action, if it is to be effective, must have a clearly thought-out purpose—and if it is to be meaningful, some kind of philosophy behind it. In an unusually penetrating article (page 4), JAMES WORTHY explores the questions every businessman must resolve for himself in order to crystallize his political philosophy—questions that go far beyond simple party lines and labels (as often as not misnomers) such as “liberal” and “conservative.”
- **More for Your R & D Dollar.** With management’s investment in R & D at an all-time high—an investment that must be reckoned in terms of tomorrow’s progress even more than today’s dollars—the need is urgent for increasing the productivity of R & D personnel. For details of a company program that is getting interesting results in this area, see *Increasing the Payoff on R & D: A Unique Experiment in Multiple Management* (page 9).
- **Plain Talk About Product Quality.** Something has to be done about product quality. The average consumer will tell you—haven’t you thought it yourself?—that just too many things break down, wear out, need replacement parts, sag, or bag before their time . . . and who hasn’t heard the sad refrain, “the earlier models were better”? And, of course, consumer products aren’t the only offenders. For some concrete recommendations for attacking the problem, see *Product Quality: Pretty Good Isn’t Good Enough!* (page 18).
- **Back in Harness.** With Labor Day safely past and the last stragglers back from Provincetown and Estes Park, the executive vacation as a subject of office conversation is brought to a close—perhaps forever—with this month’s humor feature on page 14.

—THE EDITORS

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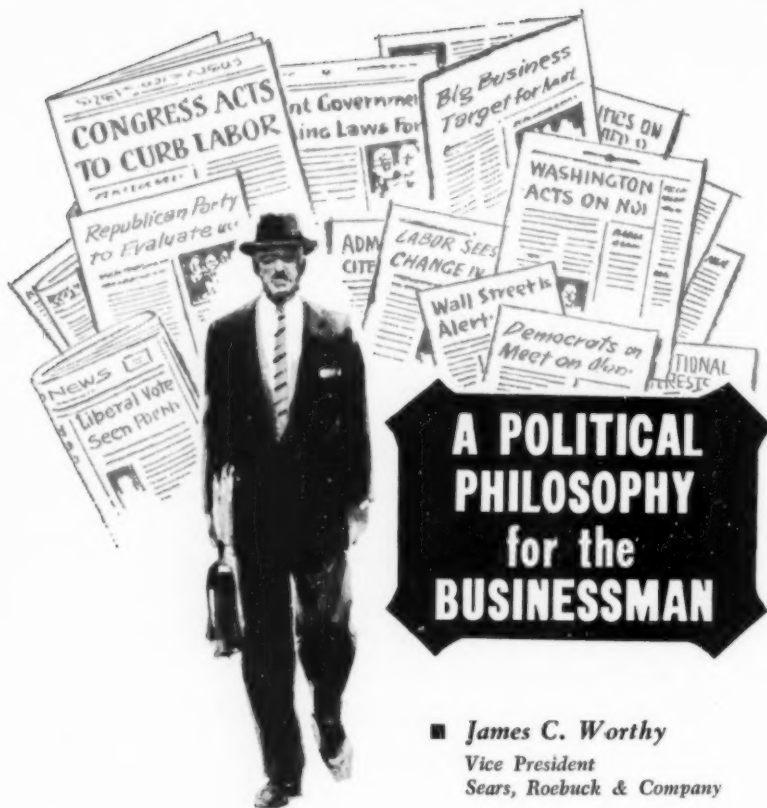
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■ **James C. Worthy**
 Vice President
 Sears, Roebuck & Company

POLITICALLY, most businessmen probably consider themselves conservatives. Their notion of conservatism is not too well defined, but generally speaking it is seen as the antithesis of liberalism—which is not too well defined either. Businessmen tend to associate with conservatism such ideas as concern for stability, protection of business interests, insistence on fiscal responsibility in government. Liberalism is associated with such ideas as social reform, government intervention in private affairs, and free spending. Conservatism is characterized by such adjectives as sound, businesslike, economical, practical; liberalism, by the converse. Implicit in this

This article is based on a chapter from Mr. Worthy's book, *Big Business and Free Men*, to be published later this month by Harper & Brothers, New York. It appears here by special permission of the publisher.

dichotomy is the notion of liberalism as threatening to values prized by the businessman and conservatism as protecting them.

It is unfortunate that words as important as these should be used so loosely, for the inevitable result is confusion. A man's image of himself is largely made up of words. If the businessman's self-image consists of words that are imprecise, he may draw a portrait that is misleading both to others and himself.

This has happened in the case of the careless use of the terms liberal and conservative. Because the businessman identifies himself as a conservative, he commits himself to attitudes which range far afield from what he might initially have had in mind. And because he considers liberalism the antithesis of conservatism, he commits himself to opposition to points of view he might otherwise find congenial. In other words, the misuse of these two labels is concealing the fact that, by and large, the philosophy of liberalism is more natural and comfortable for the modern businessman and better fitted to the needs of his role than the philosophy of conservatism.

THE CONSERVATIVE VIEW

In the strict sense, conservatism may be defined as a tendency to resist changes in established traditions and institutions; liberalism, as receptiveness to change. A leading exponent of the conservative point of view, Clinton Rossiter (*Conservatism in America*, Alfred A. Knopf, 1955), thus pinpoints the differences in the mood and bias of the two attitudes:

The Conservative's stated preferences [are] for stability over change, experience over experiment, and self-control over self-expression. . . . His urges are toward aristocracy, the Liberal's toward democracy. He makes peace, the Liberal disturbs it. He likes to look back, the Liberal to look ahead. . . . the Conservative's confidence in man, democracy, and progress is far weaker than the Liberal's. . . . The Conservative finds this the best of all possible worlds and is generally content to leave well enough alone. The Liberal thinks the world can stand a lot of improving and can't wait to get on with the job.

If blank spaces were used for the words "liberal" and "conservative," most businessmen undoubtedly would pick the description of the liberal as approaching most nearly their own notion of the kind of person they consider themselves to be, at least in their roles as businessmen.

One of the reasons the businessman usually thinks of himself as a conservative—and people generally expect him to be—is that, historically, the man of property has been conservative. In the past, the businessman *was* a man of property, and the conservative attitude came to him naturally. The modern businessman has inherited the attitude, but not the property. He is likely to be a professional manager with only a relatively small ownership interest in the business he manages.

MANAGEMENT AND CHANGE

Moreover, as a manager he is likely to be an innovator. His job, in fact, has been called “the management of change.” He has much more stake in the emerging future than in the status quo. He is never content with where he stands but is always pushing for new levels of achievement, new fields of endeavor. He is constantly looking for ways to improve and expand his business. He devotes large sums to research and development, leading to a continuous flow of new products and new methods. His sights are always ahead, and most of his important decisions have to do with things to come.

These decisions have a profound effect, not only on the course of his own business, but on the course of society. We need look back only a few years to see the startling social and economic transformations brought about by the decisions of businessmen: the growth of new industries and the obsolescence of old; shifts in population induced by industrial developments; changes in production technology with resulting changes in economic organization and composition of the work force. There is no indication that the rate of change is slowing down; on the contrary, it appears to be accelerating. In all this, the businessman plays the central role. Whatever else it may be, it is not conservative; in terms of results, “revolutionary” would be more apt.

While the word “conservative” may not apply to the manager’s business philosophy, he may still think of himself as conservative in matters external to business or in matters likely to impinge on his business. But this is logically inconsistent. More important, it is seriously dysfunctional. The businessman cannot afford to pursue policies of change within his own business and, at the same time, follow policies that resist change in the world outside. If his role

as a businessman is that of innovator, he needs to pursue social and political policies that will support his innovating. If the consequences of his business actions induce social changes, he needs to promote social policies that will facilitate the required social adjustments. To promote change on the one hand and to resist the consequences of change on the other creates needless stress and seriously inhibits the innovating process.

THE BUSINESSMAN AS A LIBERAL

A brief survey of areas on which people are likely to take positions characterized as liberal or conservative suggests the consistency with which the liberal position best fits the nature and interests of business.

A free economy is necessarily an unstable economy. It is characterized by ups and downs in over-all levels of activity and employment and by the rise of new industries and the decline of old. To eliminate fluctuations would require a degree of central control that would totally transform the system, and to preserve dying industries would require the stifling of new. A degree of stability can be achieved under a Communist system, but only at fearful cost.

Considerable progress has been made in the past generation toward lessening the severity of business fluctuations. Much of this has been due to structural changes within the economy, including more internal financing of business investment, more long-range business planning, changes in the banking system, control of stock markets, and more flexible Federal Reserve policies. The severity of fluctuations has also been lessened by the phenomenal growth of employee retirement plans and the introduction of unemployment insurance and social security. Structural and political changes such as these have made for increased stability without impairing the dynamic character of the economy. With this greater stability we are likely to have fewer severe economic emergencies, and with the understanding we now have of the economy, we are in a far more effective position to deal with those that may arise. Nevertheless, a measure of instability will always be with us.

If instability is part of the cost of a free economy, it is as much in the interests of business as in the interests of labor that that cost be broadly shared and not permitted to fall too heavily on the seg-

ment of the population least able to bear it. This is not merely a matter of ethics and morality, but one of realism. Unemployment compensation and social security serve an essential economic purpose in helping maintain purchasing power; they serve an essential political purpose in helping maintain confidence in the business system.

REGULATION AND RESTRICTION

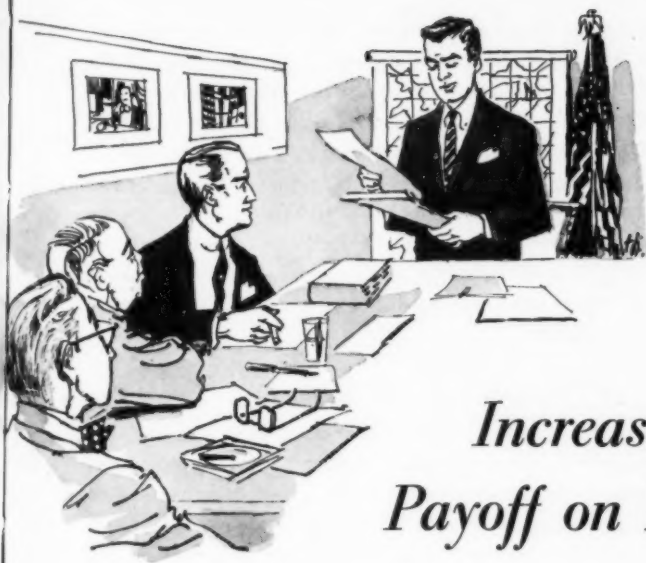
Similarly, the prohibition of monopolies and restraints of trade and the policing of trade practices not only protect the business system against undermining from within, but greatly enhance confidence that economic power is not being used for unscrupulous purposes. Regulatory commissions such as the Interstate Commerce Commission, the Federal Power Commission, the Federal Communications Commission, and the various state public service commissions have been great bulwarks against the nationalization of public utilities. These agencies are often a source of annoyance to the management of the utilities, and may at times be unduly restrictive in their regulatory policies, but they are a necessary condition for the preservation of at least a modified form of private enterprise in industries that elsewhere have been taken over entirely by government.

Because of the necessity for broad political support, our kind of system is strengthened by correcting extreme disparities in income —through, for example, the progressive income tax and inheritance taxes. The businessman may feel that the actual rates imposed are unnecessarily punitive, that they severely restrict incentives for economic growth, and that the broad interests of society would be better served by a degree of moderation; nevertheless, he recognizes that the status of business is more secure if the extremes between great wealth and abject poverty are kept within reasonable bounds.

THE LABOR MOVEMENT

A strong trade union movement also tends to strengthen the business system by increasing public confidence in its over-all justice, by assuring workers that they do not stand alone and unprotected, and by showing there are powerful forces in the society that are explicitly dedicated to the welfare of workers. It is inconceivable

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Increasing the Payoff on R & D

A Unique Experiment in Multiple Management

■ **Lauren B. Hitchcock**

Senior Partner

Lauren B. Hitchcock Associates

IT HAS BECOME A TRUISM that research and development productivity is of the utmost importance to every progressive company. In whatever terms this productivity is expressed—the number of new products added to the company's line, the portion of sales or earnings contributed in the past year by products not previously sold, the earnings attributed to specific product improvements, cost reductions, or new products, or simply the general success and health of the company over a period of years—it is obvious that few companies of any size can hope to advance or even hold their own without an active and productive research program.

The attempts of top management to increase the productivity of R&D departments have taken a variety of forms. Unfortunately,

these efforts in some companies have been confined to such steps as issuing directives, delivering public and private exhortations, and badgering the research director. The companies whose efforts have met with greater success have been those who did more to establish a climate or environment favorable to maximum R&D productivity.

Among the most important factors that contribute to a productive climate for research are those that motivate the research worker to creative effort in areas of interest to the corporation. Motivation is a fundamental requirement common to the creative effort and successful development activity, but the means of providing this incentive can take many forms.

DETERMINANTS OF MOTIVATION

Surrounding the research worker with material resources, no matter how up-to-date, is not enough. Neither productivity nor its prerequisite, motivation, can be bought from a supply house. Motivation must be sought in more intangible components of the favorable research environment—an environment which experience has shown to be a blend of the material and the spiritual for which there is no formula.

Man is motivated by his efforts to satisfy his desires, which can be defined in a number of basic needs. These are often transformed and appear cloaked in more subtle disguise, but some of the more important determinants of motivation can be recognized:

Opportunity for Achievement

One great motivational factor for the research worker is the opportunity to do things of importance. The importance of every assignment must be made clear to the researcher, even if it is only to find a small piece missing from a large puzzle. Whether the assignment is given to him alone or to a team of which he is a member, if he can be made to see the challenge, the opportunity for achievement may be one of the best stimuli.

Quality of Supervisors

Various surveys have shown that quality of supervisors, and especially of the immediate supervisor, is rated by workers at or near the top of a list of a dozen or more factors that affect their

job opportunity, with salary running in sixth or eighth place. The man to whom the researcher reports directly can have much to say about what he works on. As the most immediate representative of management, he will also report on the researcher's efforts, and so initiate the chain reaction leading to recognition and reward. If the researcher respects his immediate supervisor as a man of fairness and ability, he will be easier to reason with and to lead.

Recognition

The researcher's expressed desires for opportunity for achievement and qualified supervisors may underlie an implicit desire for recognition. The desire for recognition is considered by many research directors to be a very strong and basic source of motivation in the research worker, regardless of the efforts he may make to deprecate or conceal it. Recognition takes many forms, and what may be prized by one may seem of no consequence to another. Forms that can be equated, at least in his mind, to the esteem of his associates are more likely to be valued. Granting its importance within limits, financial recognition alone fails to satisfy most research scientists and engineers.

Recognition for research achievements can be provided by the use of status symbols (title, office, committee assignment, etc.); financial rewards; and nonfinancial rewards (patents, publicity, commendation from the president, etc.).

Of course, most of these are applicable company-wide, but they are especially pertinent in the research department. If the research worker can definitely depend on achievement being followed by recognition, he has a strong source of motivation. If, on the other hand, he thinks such recognition is uncertain, no matter how unjustified his misgivings, his potential motivation may be seriously diminished.

THE CHAIN OF COMMAND

Opportunities for achievement, quality of supervisors, and recognition—all related critically to motivation—are provided in most R&D organizations through a chain of command. Authority may flow typically from the vice president in charge of research and development to the research (or development) director, then to a

divisional manager, to a group or section supervisor, and down to a project leader or team chief, who is the immediate supervisor of the research worker at the bench or in the pilot plant. Frequent meetings are held in the various echelons to select projects, to evaluate progress, to review budget expenditures, and to rate personnel. Such systems vary between organizations, but in one form or another, they are likely to be followed conscientiously and thoroughly. As a result, the "people upstairs" usually have a pretty good idea of just who is doing what, and how well.

But the object of this systematic attention is unlikely to be aware of it, or if he has heard of it, is inclined to discount its effectiveness. After all, he has not yet gotten up far enough to see for himself. He may feel that "the executive who decides what I will work on, who my immediate superior is, and whether I will get a raise as the result of my performance is too high up and too remote to get the word *to* me, or *about* me, accurately." And so at least some of the research men to whom the company looks for innovation feel that they are the low men on an autocratic totem pole.

Can opportunity for important work, qualified supervisors, and recognition be provided in a way which the man at the bench would consider less remote, more direct, and more democratic, without undermining management?

DEMOCRACY VS. AUTOCRACY

One way in which research workers may answer this question is to suggest that they be given some voice in the processes leading up to decisions of such importance to them as a group and as individuals; or, at least, that they be given an opportunity to participate in the establishment of the ground rules governing such decisions.

A plan that permits such participation within an industrial organization is the McCormick "Multiple Management" plan, initiated in 1932 by Charles P. McCormick, president of McCormick and Company of Baltimore, Md. During the intervening 26 years, it has been developed and extended by the McCormick people in their own organization, has been adapted by other corporations, and has had a far-reaching influence on industrial management practices.

Briefly, the multiple management plan operates through four

auxiliary management boards—the Factory Board, the Sales Board, the Junior Board, and the Institutional Sales Board—whose recommendations are submitted to the company's board of directors. Recommendations from any board must be unanimous before they can be submitted to the board of directors, and the latter must approve the recommendations unanimously before they can be sent to the line organization for action. This procedure is insurance against violent differences of opinion, and it tends to tone down the wilder ideas.

The purpose of the auxiliary boards is not to by-pass the judgment of more mature men, but to supplement that judgment with new ideas. Two major aims are to eliminate one-man rule and to train and develop future leaders for the company, in accordance with their abilities.

MULTIPLE MANAGEMENT FOR R&D

A modification of this multiple management plan was recently adopted for the first time on an experimental basis in a medium-sized industrial R&D organization, and results indicate that its use has substantially improved the climate for productivity.

The corporation that successfully introduced this plan in its R&D department is engaged in a nationwide manufacturing business with annual sales in excess of \$500 million. For 25 years, it had near one of its plants a laboratory in which 60 people engaged principally in quality control and technical service to the manufacturing and sales departments. At this point the corporation decided to undertake a broad and ambitious program of basic and applied research to be directed not only to the addition of new products to the present lines, but also to the entry of new and diversified fields. A new multimillion-dollar laboratory was set up in a rural location, and a quadrupling of the technical staff was authorized. This required the employment of 180 new people within a period of less than two years. Of these, 110 were professional technical persons, few of whom had previous experience in the technology in which the corporation was engaged. From the old laboratory, 25 research workers and technicians were transferred to become part of this new group.

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Back in Harness

THE EXECUTIVE VACATION IN RETROSPECT

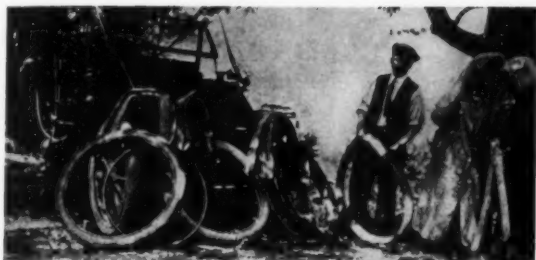
The autumnal equinox is past, Labor Day lies safely behind us, and most executives are again swept up by the increasing tempo of business. But who can blame them for looking back now and then to recall the gentler pleasures of the summer season?



"Of course, I had to keep in touch with the office."

"We went to Ohio to see *her* family."





"Bumper to bumper
all the way — and
then a flat."

"The voyage itself was
nice, but you had to
make your own fun."



"Parties every night —
but my wife's motto is
'everything in modera-
tion.'"

"I came back with a new
sense of perspective."



"And down there, servants
were only \$10 a month."


"My wife had never
been to Radio City."



"We felt a little lost the first day, but they had the most wonderful social directress . . ."



"I just spent a quiet week in town." ♦



PRODUCT QUALITY:

PRETTY GOOD

ISN'T GOOD ENOUGH!

■ **Frank H. Squires**

*Assistant to the President
Topp Industries, Inc., Los Angeles*

QUALITY CONTROL is a misleading term. We continue to use it because we have no better name for the function, but it is one cause of the common misconception that quality control is a relatively narrow activity concerned only with the measurement of characteristics affecting "quality." Actually, "quality" is not something that can be isolated from the product and controlled. It is the essence of the product—the characteristic for which it is manufactured.

The essence or quality of a sword, for example, is its sharpness; the quality of a clock is accurate timekeeping; the quality of steel is hardness; the quality of a ball bearing is roundness. Now, a sword without a sharp edge has no salable quality; in fact, it isn't a sword. An inaccurate clock, soft steel, square ball bearings—all are useless, and all fail to be the things they were meant to be.

It's pretty futile, then, to say that a product is only 2 per cent off tolerance, or .2 per cent off tolerance. Either it can do the job it was made to do, or it can't—and if it can't, it isn't what it's supposed to be, and the company isn't going to be in business for very long.

Quality control, to mean anything at all, must be more than just inspection of finished products. It must control all activities that affect the quality of the product, including, for example, the sources from which raw materials and components are purchased and the fabricating processes within the plant. For this reason, it is essential that top management be directly involved. Only general management can give sufficient authority to the broad controls that are necessary, and without direct authority from general management, they cannot be effective.

MANAGEMENT AND QUALITY CONTROL

What's wrong with putting quality control under, for example, production department authority? It should be remembered that quality control activities may have serious consequences. Material may be rejected and production schedules jeopardized. It is unfair to expect the production manager to reject his own work, or, if he does, to do it with much enthusiasm. The principle that no man is a good judge of his own work is basic; it existed long before quality control, and it is the basic reason why quality control should be independent of the production department.

Should quality control be subordinated to the engineering department? Again, the answer is dictated by the fundamental axiom that no man is a good judge of his own work. Not only is the workmanship of the production department under inspection, but the engineering design itself is under appraisal. This is particularly true when the more numerous performance data available to quality control indicate a borderline condition or a potential danger to reliability and, consequently, the need for design improvement. It would be unlikely that the engineers would listen very carefully to such recommendations from a subordinate department.

It should be clear that a function that can have such widespread influence cannot be subordinated to any single department without crippling its effectiveness.

Budget control, for example, provided that it involves the

effective control of expenses and not merely their recording, is a management or executive control, and it needs the authority of general management.

Conversely, blueprint control involves only how blueprints should be issued to the operating departments and how engineering changes should be introduced. It is desirable to have these things done in an orderly manner, but they can be done in one of several ways, and whichever system is decided upon, it does not need the authority of general management behind it.

Similarly, production control usually means the clerical job of scheduling production, marshaling the raw materials and parts in preparation for manufacture, and keeping track of the movement of products along the assembly lines. As such, it is a convenience to the production department, and it does not require the authority of top management to enforce it.

Quality control, however, is not merely a convenience; it represents the will of general management to maintain control of all activities affecting the quality of the product.

WHAT IS QUALITY CONTROL?

Whenever quality control is discussed, certain questions almost always arise. A brief consideration of these common areas of confusion may clarify the function of quality control in the company.

Is Quality Control Inspection?

All inspection is quality control, but all quality control is not inspection. Inspection is a line activity. Whether it involves operating control charts designed and applied by quality control engineering or sorting the correct pieces from the incorrect after manufacture, it is always a part of quality control. But quality control involves much more.

Is Quality Control Statistics?

Quality control usually involves statistical techniques deriving from the work of Dr. Walter Shewart. These techniques themselves are based upon the principle of imperfectibility, the concept of inherent variability, and the knowledge that the limits of inherent

variability can be measured and a process controlled within them.

The most efficient way to control the various activities affecting the quality of a product is undoubtedly by the use of statistical techniques. Control is difficult without measurement, and there were no quantitative measures of quality until modern statistical quality control techniques developed them. Nevertheless, it is true that some plants that do not use statistical techniques still consider their control of product quality satisfactory. Furthermore, although the government recommends sampling tables for contractors who wish to use statistical sampling, it does not insist that statistical techniques be used. It must be said, therefore, that the most efficient form of quality control is by the use of statistical techniques, but both industry and government recognize that there can be quality control without statistics.

THE SCOPE OF QUALITY CONTROL

What does control of all activities affecting the quality of the product mean in a typical industrial plant? It means that the quality control division must organize and execute a comprehensive control plan in the following areas:

1. Confirm that the purchase orders going out to vendors for the procurement of raw material, fabricated parts, and components correctly specify what is needed to assure the desired quality level in the final product. When a government contract is involved, the checking procedure demanded requires a considerable knowledge of government specifications and procedures.
2. Conduct surveys of proposed vendors, and establish a list of qualified vendors.
3. Inspect purchased material on arrival at the plant.
4. Inspect material at the vendor's plant when circumstances demand it.
5. Reject defective material, and prepare clear and explicit reports on the reasons for rejection.
6. Conduct reviews of discrepant material, in company with the engineers.
7. Transmit acceptable material to stock, and clearly identify it.
8. Maintain records of these inspection activities, and develop comparative analyses that identify the suppliers of good material and

the suppliers of poor material. Bring this information to the attention of the purchasing department.

9. Inspect machined parts in the fabrication area, again transmitting good parts to stock or to the next operation, rejecting defective parts and arranging for their review and disposition. Develop comparative analyses for the guidance of production supervision and the information of management.

10. Inspect subassemblies and assemblies in the assembly area, and arrange for acceptance and transmittal of good material to the testing department, rejection of poor material, and the collection of data for comparative analysis.

11. Test the finished product, diagnose and trouble-shoot if necessary, and, when satisfactory, transmit to the shipping department. Prepare such test records as may be required to accompany the finished products. Collect and analyze data, and feed back reports to the engineering and production departments and to management.

12. Check shipping documents for accuracy and shipping crates, etc., for adequate strength.

13. Maintain continuous surveillance of engineering drawings and specifications at all stages of manufacture in a search for dimensional interference, irrational tolerance limits, and incomplete or ambiguous specifications. Refer back such findings to the engineering department.

14. Develop inspection procedures and conduct studies of inspection methods and test activities in a constant search for reduced cost and increased efficiency.

15. Exercise a coordinating function among the procurement, engineering, production, and sales departments and management. Keep all informed on matters affecting the quality of the product.

This program does not distinguish between quality control engineering and inspection because, in general, quality control engineering will plan the program and inspection will execute it.

QUALITY CONTROL AND COST REDUCTION

Although the textbooks praise quality control as a universal cost reducer, this aspect has probably been overemphasized. It is true that quality control reduces costs because it is always true that a scientifically planned approach to a manufacturing problem will be

less costly than an unscientific plan, other things being equal. But other things frequently aren't equal.

For example, statistical sampling may be applied in the receiving inspection department in the belief that it must be cheaper than 100 per cent inspection. It is, of course—but it's hard to find a plant that has ever completely inspected all parts. The usual practice has been to spot-check a few pieces from quite large batches—what might be called "informal sampling." As a consequence, quality control managers have often found that the mathematically correct samples demanded by the sampling tables have been larger—frequently much larger—than those used in spot checks. Thus receiving inspection costs have gone up instead of down. Moreover, the moment you take quantitative measures of quality along the assembly lines and into the machine shop, you discover many problems not known previously. Rejections increase, rework charges increase, and it may be found necessary to have more inspectors relative to production.

Another reason why quality control costs rise relative to production costs is that quality control is often adopted when a company has penetrated into a highly precise field of modern technology with a primitive inspection system and has found it impossible to meet specifications. In such a case, quality control will find that certain expenditures, which are inherent in any attempt to make today's complex technological products, will have to be made for the first time. The company that survives acquires a reputation for the quality of its products, and it prospers; but the quality control costs are never less than the primitive (and inadequate) inspection costs once were. You cannot begin to make the complex products of a new technology without a carefully planned and professionally staffed quality control program; but don't expect that it will ever be as cheap as the handful of inspectors you used to use twenty years ago.

LONG-RANGE BENEFITS

Of course, use of the quality control improves the product tremendously, customers are delighted, and the chances of being in business ten years hence are vastly improved. But cost accounting records may show only the increase in quality control costs relative

to production costs. The tremendous benefits—defective parts that quality control prevents from being made and the labor that would have been employed wastefully in making them—do not appear. If these advantages could be quantified and compared with the quality control costs, it would be seen that the benefits far outweigh the costs.

It is unrealistic, then, to expect absolute cost reductions from quality control, but it is a necessary part of the new technology. Its costs cannot be compared with traditional inspection charges any more than a jet can be compared with a biplane—but it is indispensable in an industrial world of rapid change and increasing complexity. ♦



"I'm writing a book. See that it's a best-seller."

Consumers enjoyed an unprecedented buying spree after the 1953-54 recession, but this time they seem to be playing it closer to the vest . . .

CONSUMER SPENDING: *Prices Slow the Pace*

Condensed from Business Week

CONSUMERS have emerged from the recession with a sustained expansion of confidence.

Far more are thinking actively about buying big-ticket goods—particularly houses and major household appliances.

But today's consumers aren't displaying the unrestrained buying enthusiasm that marked their mood after the 1953-54 recession.

They are showing a deep concern about prices—especially new-car prices—that may put a damper on their purchase plans.

These are the significant findings of the latest survey of consumer attitudes made by Michigan University's Survey Research Center. A portrait assembled from the sampling of 1,500 families by the Survey Center shows that the consumer today is a lot more realistic in his appraisal of (1) the economy and what to expect over the next few years, and (2) his own financial well-being.

For instance, far fewer consumers view prosperity as a built-in economic condition. In 1955-56, it was widely believed that good times would pre-

vail for the next five years at least. This opinion was held by people on all income levels, but particularly by the presumably economically sophisticated upper-income groups—which may explain why there was a burst of capital expansion in excess of demand, since it is the upper-income levels that make such managerial decisions.

Now, apparently, the rude shock of the recession, which bit deeper than any other postwar dip, has convinced a big majority that the U.S. hasn't yet found a foolproof way to level out its economic roller coaster. The Survey Center's May-June study found that only 17 per cent of those interviewed expect uninterrupted good times for the next five years. Upper-income people are somewhat more optimistic, with about 20 per cent seeing unbroken good times ahead. These figures compare with a roaring 40 per cent of all families in November-December, 1956, and 50 per cent of higher-income families during the period.

It's possible, of course, that sustained economic improvement could

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again turn consumers into the eager buyers who mobbed the market through much of the postwar period. Certainly there are signs that people feel considerably better off financially, because of higher incomes and less fear of unemployment, than they did a year or so ago. But they aren't as optimistic as they were in mid-1955, and a substantial 23 per cent still say they are worse off now than at this time last year. As a result, Survey Center researchers doubt that there will be any "early repetition of the buying spree of late 1954 and 1955." But they add:

"It appears on the basis of the June survey that in the period ahead, consumers will make a contribution to the business expansion."

Nowhere should this be more true, on the basis of extensive interviews, than in the housing and used car markets. Intentions to buy these major items are exceptionally strong.

When it comes to housing, whether these intentions-to-buy will be translated into action depends on such things as mortgage terms and available financing for builders. (The Survey Center cautions that the figure for housing intentions has a bigger margin of error than other data in the survey.) But in any event, the survey reveals a remarkably strong and continuing backlog of demand for the residential housing industry. On the other hand, home repair—which has been strong in the past—isn't so bullish.

One explanation is that consumers, with bigger families and older children, are looking afield for more space. In addition, they may decide that a house is a good investment be-

cause they don't see any sharp drop in prices in the offing.

Less clear-cut is the attitude toward autos. Despite the fact that the sales rate of new cars is running substantially higher than at any time in the last couple of years, consumers kept telling Michigan researchers that they were mostly in the market for used cars. Interest in new models was lower than the enthusiastic demand displayed in late 1954 and through 1955. In contrast, demand for used cars has never been higher, according to the Survey Center.

It isn't quite clear why the automobile paradox exists. Perhaps people are waiting for the much-touted new models, with the added compact-car starters. Or the strong demand for used cars may be coming from the ever-growing number of families who are in the market for a second car.

A better explanation is the price factor. Today's consumers, it appears, are pretty well used to the price levels established in a burst of inflation after the 1954-55 recession. But that doesn't mean they like them. Comments the Survey Center: "More consumers than at any time since the Korean War expect prices to rise in the future, and this prospect is heartily disliked." For the past few years, this expectation of slowly rising prices has become more widespread, until today almost half the families in Michigan's sample are convinced they can expect no relief.

This is one reason why so many people feel financially worse off. Beyond that, people are concerned not so much about prices as about the expenses of living—meeting the monthly bills. In such an atmosphere,

it isn't hard to see why some items—such as new cars and to some extent major household goods—don't catch the buyer's fancy as they have in the past. This is particularly true among the well-equipped, upper-income groups.

Price theory, of course, assumes that if people think prices are going up, they'll buy now. Nevertheless, during the years it has been making surveys, the Survey Center has established that a period of slowly rising prices is not the time when consumers think it is favorable to buy. It may be that the conventional doctrine does apply to houses—which people view as savings.

Perhaps expressions of intentions to buy used cars eventually will be translated into new-car purchases once consumers see the new models—especially the smaller American-built cars. However, one danger, say some observers, is that the compact cars will be priced too high for consumer anticipations.

Regardless of how people finally act in the market place, there is no question in the minds of the Michigan researchers that slowly rising prices have now become a dominant influence—to some extent detrimental—on the attitude of consumers when it comes to purchasing large deferrable items. ♦



"No charge; I frequently work for nothing."



The Dilemma of The Corporation Man

By J. Irwin Miller

Condensed from Fortune

THERE IS MUCH TALK today that the organization is the enemy of the individual, and that, while all organizations are enemies of sorts, the arch-enemy is undoubtedly the Business Organization.

Perhaps for the greater number of human beings, conforming to the organization is no great worry, for the organization has its comforts for the mind and the spirit, just as it has for the body. Because of the organization we are no longer compelled to walk if we don't want to. The organization transports us. And for our minds, the organization supplies acceptable opinions on politics, on business, on labor, on marriage, on religion. We do not have to think for ourselves if we do not wish, and most of the time this is a comfort. And while it is fashion-

able to view this situation with alarm, the truth is most of the time we love it.

There appear to me to be several reasons why we alternate between love and hate of the organization. First of all, I seriously doubt that there is any one of us who is really ever entirely sure that he belongs. The intense desire to be accepted by the group is so strong in all of us that it generates doubt that we are wholly accepted and wholly approved. It makes us uncritically eager to conform to the society with which we desire to identify ourselves, and it makes us violently critical of the "off-beat" member; by driving him out, we hope to thrust ourselves more surely into the center of the group.

This desire is expressed within the

Fortune (August, 1959), © 1959 by Time, Inc.

business organization in the standard forms of griping around the Coke machine and bootlicking in the boss's office and around the conference table. If we are a boss or a supervisor, it causes us to demand in the area within our control an excessive and unreasonable amount of agreement. Out of his fear the subordinate is overeager to conform to the group. Out of his fear the boss is overeager that the group conform to him.

Let us for the moment turn from the individual as he reacts to the organization and examine the monster, to see whether we can identify any representative types of problems that exist within the organization itself rather than within the individual.

Let us suppose we can see inside the head of the president of a large manufacturing organization. His company employs 20,000 persons and operates half a dozen plants. It distributes its products in every state and in many foreign countries, and—most frightening of all—it has competitors.

Now let us suppose that these competitors are extremely vigorous, and that our president knows that to maintain his share of the market and to make earnings which will please his directors, he must accomplish the following very quickly: design and perfect a brand-new and more advanced line of products; tool up these products in such a way as to permit higher quality and lower costs than his competitors; purchase new machinery; arrange major additional long-term financing. At the same time, his corporation's labor contract is up for negotiation, and this must be rewritten in such a way as to obtain good employee response and yet make

no more concessions than do his competitors. Sales coverage of all customers has to be intensified, and sales costs reduced. Every one of these objectives must be accomplished simultaneously, and ahead of similar efforts on the part of his competitors—or the future of the company is in great danger.

Feeling that every one of these goals must be accomplished in the way he conceives them, and at the same time feeling that other people down the line do not fully share either his understanding of the company's need or his own sense of urgency, realizing that he cannot personally supervise all whose work is necessary to the achievement of the program, he becomes dogmatic. He issues orders. He says things are jolly well going to be done this way and no other. He says the company's negotiators are not to give in on the union's demand for premium pay or the union shop. He says every salesman must make so many calls each day. He says you can't add a single person to this office, which has already got too many people in it. And he pounds the table every time he says these things. For he feels that this great, vast, and ponderous organization is his enemy and that inside its faceless exterior all his plans, his programs, his timetables will be diluted, slowed down, and ultimately defeated. And his real antagonist is neither the customer, nor his bankers, nor the union. His real antagonist is the organization.

Let us turn our attention to another fellow in this act—an executive from the ranks known as "middle management." He is running a plant employ-

ing a thousand persons, which is bigger than the founder of the company ever ran throughout his whole business career. This plant, in addition, is the major employer in its small community. Now let us assume that our middle-management executive is currently bargaining for his first labor contract.

And let us suppose that every other plant in town has for years had a union-shop contract. Our middle-management executive knows that if he grants a union-shop contract, the rest of his negotiations may not be too difficult, but that refusal to grant such a contract may not only involve him in a strike, it may earn him the lasting hostility of the community. From the head office he receives a wire that says, "No union shop. Period. All our other plants have successfully negotiated contracts without it, and you are not going to negotiate one with it." When, therefore, he obediently refuses the union shop, the bargaining committee says, "How come? Are you anti-labor? If you were to conduct an election, you would have an almost unanimous vote in favor of it. Are you afraid to ask the men how they feel about it?" If our middle-management executive replies, "Boys, I know you're right, but the big speckled bird up in the head office says, 'No,'" the committee can have only one reply, and that is, "Then what is the use bargaining with you? You aren't allowed to do any negotiating. The only way we'll get anywhere with this company is to strike," which they do. The head of the corporation, when he learns of this and sees that no success is made in settling the strike, begins to won-

der whether the manager in the plant is really executive material.

The special problem of the middle-management man is this: On the one hand, he is required to discharge what in the past have been considered very great responsibilities. On the other hand, the need to conform to the broad programs of the whole organization, which are established without the possibility of his direct participation, deprives him of the power of determination and decision that his own people expect him to have and forces him at times to carry out policies and programs he may passionately believe to be wrong, at least in their local application. So the organization also becomes his special enemy, and appears always to be able to deprive him of genuine accomplishment. This arouses his fears and induces in him a conformity which at times he despises and yet from which there is no escape, at least on terms he is willing to contemplate.

We have pictured two broad kinds of problems: the first arising from an individual's consuming desire to "belong" and his surrender of individuality to the organization in the hope of gaining his desires; the second arising from the way the organization manages to defeat both the individual who runs it and the individual who works within it.

How shall our Organization Man go about handling his problems? My first suggestion is a fairly obvious one. The man in the business organization must neither embrace the organization uncritically nor despise it categorically. Instead, he must try to understand it, which of course is easier

said than done. You begin, as in most things, by using your mind, and you determine early in your organization life not to listen to the cynical advice: "Give the boss what he wants. Never mind what *you* think." The Corporation Man has got to have the courage to reject this basically adolescent notion, and the good sense, as well, to reject that other attitude: "We'll take care of our own department, let the damn engineers solve their own problems." The wise man will try to understand the part that his department or group is playing, and the requirements laid on him individually, if his actions are to be consistent with the main purpose of the institution.

Of course, even if he does succeed, all his problems are not yet ended, for while his actions and his plans and his decisions may be of an astonishing quality, this very quality, this habit of appearing to aim at goals beyond those of his associates, may earn him the active dislike and resentment of those around him, including his own boss—unless he knows and understands how these people with whom he associates feel and operate.

Somewhat more important to the man in the organization than a knowledge of double-entry bookkeeping, or of the ins and outs of corporate politics, is the cultivation of a capacity to feel. Does it seem odd that painting and poetry and music

and suffering and great causes and dedication to religion are essential to the making of an effective Organization Man? Well, they are, for without them he is a half-man, half happy, half bored, half effective, killing the time of which at the end he learns there was so very little.

Finally, in dealing with the corporation he must cultivate courage. I mean the courage to take a right stand and to draw a right line, and, what is more important, to accept the consequences of so doing. It may mean the willingness to change a job or to lose a job. It means the kind of courage to speak the truth as you see it, to your customer if you are a salesman, to your boss, to your union if you are a negotiator. And it means the courage to do all this when you have families to support, children to educate, debts to pay, pension reserves to lose—and at a time when you have reached the age at which prospective employers consider you no longer young.

These may sound like very prosaic remedies—to think, to feel, to be brave. But they are perhaps man's only weapons. Those of us who take up these weapons and grow strong and skilled in their use may find the organization altering surprisingly before our eyes. The organization will no longer appear as the enemy of the individual but, instead, a most effective means to the individual's fulfillment. ♦

THE LARGEST of our modern business enterprises have become so big . . . that they cannot be successfully run if any one man seeks to impose his will arbitrarily upon everybody else.

—Alfred P. Sloan

The New Dominance of INTERNAL FINANCING

By Arthur Lesser, Jr.

Condensed from Challenge

IN A LITTLE MORE than a decade, there has been an important change in the financing of American business. In 1946, the retained earnings and depreciation allowances of corporations accounted for 52 per cent of total corporate investments. By 1958, that proportion had climbed to some 82 per cent.

A recent study by the Federal Reserve Bank of Chicago shows that, while depreciation allowances in 1947 amounted to approximately \$5 billion, this figure jumped to \$21.5 billion in 1958. According to the economics department of McGraw-Hill Publishing Co., if the capital spending that is now planned by manufacturers for 1959 through 1962 is kept at its proposed level, the funds from depreciation allowances can be counted on to cover more than 94 per cent of that spending. Indeed, in some industries (automobiles, trucks, and automotive parts), the allowances for depreciation will be greater than the spending that is now contemplated. Although the proposed level of spending can be expected to go up as business improves, the day is not far off when all capital investments in plant and equipment by established manufacturing firms

will be financed by the funds made available from depreciation.

Unlike retained earnings, which tend to fluctuate with the business cycle, the flow of capital funds from depreciation allowances has not only been markedly stable, but has tended to increase during the past few years at a rate of about \$2 billion a year. What is particularly attractive about such allowances is that they are tax-free expense items that involve no cash outlay. They represent the recovery over a period of time of the value of a capital investment made by a firm in its own plant or equipment. With depreciation allowances, a firm that just broke even financially could still register a gain in cash, provided that it did not spend anew for capital goods. In contrast, a corporation's retained earnings represent a cash flow into its treasury only after income taxes have been paid on them.

Thus, the 1954 tax law that liberalized the methods companies could use in computing their depreciation is making itself felt. Costly plant investments that were made in the past are now helping to provide the capital for the future expansion and improvement of American business.

Challenge (July, 1959), © 1959 by Institute of Economic Affairs, New York University.

Many corporations, taking advantage of the growth of internal funds available to them, have established the practice of fixing their minimum capital budget at the amount that their depreciation allowances will yield for the year. During slack periods, therefore, the total investment of the firm will not go below this amount. Thus, continuous investment and growth is assured despite the fluctuations of the capital market.

Other companies have even gone so far as to draw a firm line against using external funds. As profits improve, the retained earnings of these companies (after taxes) are sunk into further capital investment. Apparently, the cost of external financing is greater than these companies are willing to pay. Often, the cost is not considered in terms of interest charges alone, but in other terms: becoming beholden to creditors; diluting the per share earnings of the company; or sharing control with new stockholders. The larger the amounts of external capital needed relative to the resources of the firm, the greater are nonmonetary costs likely to be.

This growing ability of American corporations to bypass the necessity of competing for funds in the capital market leads to some intriguing questions. What effect will the greater stability of internally generated funds have on business innovations? Will industry, finding itself with an unusually large flow of its own funds, be spurred to greater improvements and innovations, or will it use these funds in other ways? Can we expect to see newer products and newer production techniques, or will internal funds dull the sensitivity of corpora-

tions to the demands of the market?

When corporations decide to go into the capital market for external funds, they must present a statement to explain the purposes for which funds are needed. Although these funds will later be incorporated into the general treasury, they may be identified in the minds of investors and bankers with a certain project or undertaking, just as they are so identified in the company's budget. When there is some doubt about the wisdom of public financing in the case of a particular firm, a conventional project of proved merit that involves little or no innovation will be more persuasive than one whose outcome is more doubtful. For example, external funds to finance a traditional ammonia plant are easier to obtain in a borderline case than funds for an experimental plant to develop commercial uses of lignin, which is now a waste product difficult to dispose of. It seems reasonable to conclude that an identification of external funds with innovation is generally not justified.

However, external funds may be raised by many corporations in order to free their internal funds for further experimental research and development. Once the external and internal funds enter the treasury of the corporation, they are pooled and used without regard to their sources. The aggregate of funds can then be allocated among such diverse outlays as labor, materials, taxes, equipment, research, etc. Thus, an activity that is too ephemeral to receive external financing could be organized by a firm with its internal funds. These could soon be replaced in the treasury

by funds raised from outside sources.

In most corporations, the allocation of funds for new projects is generally determined by some method of capital rationing. The rationing method often used is some version of the quick payback; those capital expenditures that are to be financed must be able to show a financial return from estimated net savings or net earnings in, say, two years. New projects that offer untested promises of financial returns are likely to be postponed, if not shelved completely.

In industries like pharmaceuticals, aircraft, and electronics, where product and production innovations are usually the most readily profitable, funds from both external and internal sources will probably always be available for research and experimental undertakings. In other firms, where the profits from innovations may not be realized for some time, innovations will usually depend upon the judgment of management rather than on the sources of its available funds. The electric utilities, for instance, who depend primarily upon external financing, do little research, and the innovations they do initiate are gen-

erally not basic. In contrast, the Bell System, which also depends heavily upon external financing, is an acknowledged leader in communications innovations.

On the other hand, the largely internally financed steel producers have not been notable innovators; while Du Pont, which is also internally financed, has been an outstanding innovator.

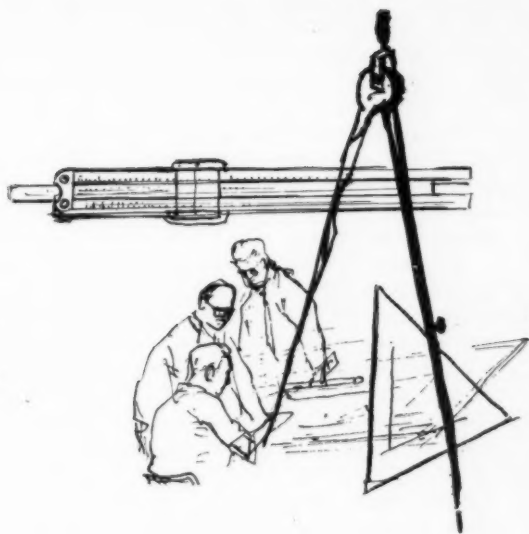
A recent survey indicated that most managements look with disfavor on replacements which do not have some innovations that will produce greater efficiency, cut costs, or add to the plant's capacity. While it is true that the majority of such innovations will generally be of a minor nature tied to existing plant and equipment, they still represent a new and better use of resources. With the growth in internal financing, these managements can escape the traditional restraints that usually accompany the raising of external funds.

Thus, the preponderant evidence supports expectations of more innovation—both basic changes and refinements—as the flow in internally generated funds increases. ♦

Paper-Backed Salesmen

MORE THAN 250,000 paper-backed salesmen—instructional booklets distributed to trade schools throughout the country—have been on the job for one company (Republic Steel Corp.) during the past decade. The idea behind this sales approach is to help student electricians with their problems (in this case, tube-bending) while they are still in training, at the same time acquainting them with the company's materials. When their apprenticeships are completed, students will often be in a position to specify materials on the job—and the company feels that they will be pre-sold on the products with which they have had experience and success in the past.

How Real Is the ENGINEER SHORTAGE?



By Earl C. Kubicek

Condensed from Industrial Research

MANY ENGINEERS cannot understand why a shortage impels employers to engage in cutthroat competition for new engineers while refusing proportionately better salaries to the experienced engineers already on their payrolls. One well-publicized answer—coming as it did in the midst of countless comment on the acuteness of the shortage—held that the shortage of engineers is nonexistent, a myth perpetuated by the engineering manpower experts.

Although the demand for engineers has grown rapidly, according to some economists, the supply has grown more rapidly. Engineering

salaries have drifted downward in relation to other workers', and they have lost ground compared with doctors and college teachers. Increases in demand over supply, in a free market, will manifest themselves in a rising price market. Therefore, they conclude, there is no shortage of engineers.

But others in the business of supplying and hiring engineers feel differently, pointing out the rise in starting salaries in the ten-year period ending with 1957. In 1947, the average starting salary for the graduating engineer was \$244 per month. By 1950 it had risen to \$260 and was

Industrial Research (Summer, 1959), © 1959 by Scientific Research Publishing Co., Inc.

just beginning to climb: 1951, \$270; 1952, \$305; 1953, \$325; 1954, \$345; 1955, \$394; and 1957, \$433. In 1958, it was \$460, and this year it is estimated at \$475. Between 1950 and 1959 this amounts to a rise of 83 per cent—an undeniable example that there exists a real supply-and-demand-type shortage, at least of beginning engineers.

It is true that the salaries of experienced engineers (probably averaging about \$800 per month with ten years experience) have not kept pace with beginners' salaries. But it is not quite correct to say they have "lost ground compared with doctors and college teachers." Teachers were so grossly underpaid that any increase in their salaries would be reflected in a distorted percentage increase. As for doctors, comparisons are impossible because they are mostly self-employed.

A better way of determining the extent of the shortage is the survey conducted each year by the Engineers' Joint Council. The council polls several hundred firms across the country that are representative of American industry seeking professional engineering talent. There has not been one year in this decade when the requirements were satisfied by actual hirings!

The shortage of engineers today is not only driving starting salaries upward; it is fostering job-changing of experienced engineers on an unprecedented scale. The simple truth of the situation is that an engineer can almost make more money by changing jobs than he can by staying with his present employer. The reason for this is not that there is no shortage

of engineers, but rather that many managements even now are not yet fully aware of just how serious the shortage is.

One estimate is that there are 85 times as many jobs for scientists and technicians as there were 80 years ago, but only five times as many workers in the total labor force.

One of the strangest paradoxes in this rather topsy-turvy picture has been the development of "engineering unions." Engineer unions are, in many ways, a contradiction to the conventional union which, in the main, strives for economic gains—increased pay, union security, and fringe benefits—as ends in themselves.

The engineer unions, while certainly concerned with the economic gains of its membership, are motivated more by the achievement of these ends as a recognition of the value of engineering and science to society.

In a recent comprehensive research study, typical engineers were shown to be strongly work-oriented, individualistic, serious-minded, and conscientious. They generally have a high level of energy, which responds to pressure with increased exertion. And the Commission on Human Resources and Advanced Training has determined that in the undergraduate areas, engineering and the sciences attracted the most intelligent students.

In short, these are intelligent, hard-working men. Treating them as "hired help" is a tragic waste of needed talent. Yet, engineers are often used in non-technical positions or as nonprofessional technicians.

Industry's dilution of the engineering profession over a long period of time has caused the trained engineer to become confused as to the value of professional status. Industry and the public use the term "engineer" so loosely that it largely has lost its original meaning. The Professional Engineers Conference Board for Industry pointed up this fact in a recent study:

"The engineers confess that their own group lacks professional spirit and emphasis on professionalism. They lay some of the blame on company employers of engineers in not clearly defining who is, and who is not, an engineer."

The lack of this "professional spirit" forces the engineer to look with favor on the managerial route as the only route to advancement. Surveys have shown that there is no strong inclination on the part of technical personnel to stay in the technical field. There is little chance for recognition.

The situation is made more critical by the serious decline in recent years in the number of young persons reaching the age when it might be reasonable to expect them to enter engineering and science.

According to a B. F. Goodrich study, the number of young people reaching college age—18 to 24 years—has been declining steadily for the past dozen years. The number of college students in 1959 is nearly the same as in 1936, about 16 million. Projecting these figures and known birth-rate increases, there will be about 27 million in college by 1975. But how many of these will be pursuing a career in engineering or sci-

ence? There are no assurances that there will be any reasonable increase in the number of engineering and scientific personnel beyond the 18.6 per cent now being graduated annually. If we take the current ratio of 186 engineering graduates for every 1,000 awarded BS degrees, we will have accumulated a deficit of 100,000 engineering and science graduates by 1967.

Something near 59,100 bachelor of science degrees will be awarded in 1959, and five years from now an estimated 76,400. Will this be enough to take care of normal attrition, as well as the increasing demands of a modern technological civilization?

Probably not. One effect will be to increase starting salaries of engineers even more. As in the past, the levels of various types of engineering—electrical, mechanical, chemical, etc.—will vary with economic demands. At present, electrical engineers are leading, demand-wise, and probably will continue to do so. Not only national defense needs but also the myriad industrial applications of electronics will be contributing factors. Physicists and mathematicians also will continue in demand.

A shortage of engineering and scientific personnel has existed for some years, and there is little reason to believe that it will cease in the foreseeable future. But the picture is not so dismal that there is no hope. Increased efficiency in personnel usage can alleviate some of the difficulties. A more enlightened management will encourage more engineers to stay in their fields — and to advance in them. ♦

Human factors have an important bearing on the design and engineering of consumer products, and industry is beginning to acknowledge this fact . . .

PRODUCTS ARE FOR PEOPLE

By Mitchell Gordon

Condensed from The Wall Street Journal

IN A SMALL ROOM on the University of California campus at Los Angeles, a man is being paid \$2 an hour to sit in a chair and watch television for 12 hours a day.

It's all for science, however, not for entertainment. In fact, a very human gremlin sitting behind the set is making the pastime anything but pleasurable by throwing the picture out of kilter every 20 minutes or so, forcing the viewer to make small adjustments by remote control. Object of the experiment: Some enlightenment on why a person gets tired doing practically nothing.

At a Du Pont laboratory in Wilmington, Del., a man shovels sand from one pile to another inside a room heated to 100 degrees. Scientists outside the room record changes in the shoveler's blood pressure, breathing rate, and heart beat, as registered by a battery of instruments. Object: To determine how much a laborer's work capacity is cut by oppressive heat.

At the Human Performance Laboratory of UCLA, researchers are studying how various types of shoe

soles affect human locomotion, what gives muscles their strength, and whether a dentist can work better standing or sitting.

These are but three examples of how the talents of the physiologist, once restricted to medical and pharmaceutical fields, are being drawn increasingly into industrial research work these days. "Five years ago," says Dr. Lawrence E. Morehouse, chief of the UCLA laboratory, "there were only about a half a dozen physiologists in industry. Today, the number must be close to 100, and it's rising at a faster rate than ever."

Dr. Douglas Drury, head of the Department of Physiology at the University of Southern California, concurs. "Before World War II," he says, "maybe 1 per cent of our graduates went into industrial jobs outside the pharmaceutical field. The proportion now is closer to 5 per cent, of a much larger student body."

The sitting experiment at UCLA is being underwritten by Jebco Corp. of San Marino, Calif. Jebco's costs are about \$500 a month, including, besides the sitter's salary, the use of

The Wall Street Journal (July 15, 1959), © 1959 by Dow Jones & Company, Inc.

instruments for measuring such phenomena as foot swelling and armrest pressures. The company, formed about a year ago, intends to develop and license the manufacture of a self-aligning chair. Results of the UCLA study undoubtedly will influence design of the chair, which will be built to relieve pressure on a sitter's thighs by shifting as the sitter changes position.

Du Pont's experiment is being conducted by a team of 12 men headed by Dr. Lucien Brouha. Their principal assignment is to help improve working conditions of Du Pont employees—and perhaps help devise a few salable products as well.

One of the team's findings so far: Workers who can load two to three pieces of equipment a minute in 60-degree temperatures cannot be expected to handle more than one and a half pieces a minute in 100-degree heat.

Dr. Morehouse at UCLA, who's studying the physiology of walking, is continuing research he began with Nathan Hack, who founded the Ripple Sole Shoe Corp. This company licenses more than a dozen concerns in the U.S. and abroad to use its patents. The soles, made of a lightweight resilient material with deep grooves cut across their width, give a springy effect when walked upon. Ripple Sole finances Dr. Morehouse's research on walking.

Designers of other consumer goods also are putting physiologists to work. At the Ford Motor Co. in Dearborn, Mich., a team of physiologists, engineers, and psychologists form a Human Factors Group that attempts to solve comfort and safety problems.

Currently the group is attempting to determine optimum dimensions for doors in order to ease vehicle exit and entry, is seeking the relationship of windshield design to driver performance, and is studying the relative merits of joysticks compared with ordinary steering wheels.

Plane makers in particular are pioneering in the use of physiologists. Douglas Aircraft Co. used them extensively to plan specifications for its DC-8 jet airliner. The size of the jet's fuselage, for example, was determined after a three-month study of shoulder widths covering thousands of persons. The importance of an exact calculation is pointed up by the fact that an extra inch of shoulder room would have added 300 pounds to the weight of the plane—or roughly the equivalent of two passengers.

"It's up to us—the physiologists, psychologists, and other professionals in the field of human sciences—to make the engineer, whose training has been geared to machines and materials, aware of the human problems in a precise way," says Bruce Embury, group leader for human factors at North American Aviation's Airframe division in Los Angeles. "Until now," he adds, "the engineer pretty much has made his own assumptions about the human being because he felt he knew him, being one himself. There's too much depending on the man-machine integration in space and supersonic jet travel, however, for the old methods to be satisfactory today."

The group, which started six years ago with a staff of 15 persons and now has 120, is involved largely in the determination of man's "G" toler-

ance—that is, the amount of acceleration he can stand.

At the Convair division of General Dynamics Corp. in San Diego, physiologists are probing the mysteries of heat stress to find out how much heat a pilot can take and still perform his basic duties. They've already discovered this temperature can be higher if it rises gradually instead of suddenly. In Burbank, a group of scientists at the Lockheed Aircraft Corp. are looking into another aspect of stress that space pilots may encounter—the stress of having to endure flights up to five and six days in length—and they are trying to determine the type of rest cycle that might best reduce that stress.

Meanwhile, back on earth, a year's study recently completed by UCLA's Human Performance Laboratory for Ritter Co., of Rochester, N. Y., promises to make dentists more efficient.

"We found that dentists could get a lot more work done, and feel a lot better about it, if they could do their work sitting down," reports UCLA's Dr. Morehouse.

As a result of these findings, Ritter Co. is currently designing a line of equipment to take the dentist off his feet. One Los Angeles dentist, who worked with the Human Performance Laboratory on the study, has already adopted sit-down dentistry and reports that he's been able to do about 50 per cent more work in a day.

A scientist for General Electric Co. in Schenectady, N. Y., predicts that physiologists — and other scientists dealing in human factors—are going to play a bigger role in the design and engineering of consumer products. That is, he says, "If they can ever succeed in selling functionalism as well as design engineers have succeeded in selling eye-appeal." ♦





OUR \$41-BILLION LEISURE MARKET

Condensed from Printers' Ink

THE NATION'S CONSUMERS will spend an estimated \$41 billion on their increased leisure this year. Moreover, manufacturers of the array of products that consumers buy for pleasure are full of optimism over the future potential for sales. Most of them conservatively look for a steady 5 to 10 per cent annual increase in the various segments that make up the vast market for leisure-oriented products.

There is as yet no universally accepted definition of the leisure market. There are, however, some specific major components. Here are the enormous sums being spent on them this year:

- \$2.1 billion on boating
- \$2.1 billion on photography
- \$600 million on swimming pools
- \$500 million on musical instruments
- \$300 million on the components that make up high-fidelity and stereo systems
- \$2.3 billion on overseas travel

- \$5 billion on radios, television sets, phonographs, tape recorders, and repairs, not counting records

- \$3.5 billion on gardening equipment

- \$16.8 billion on recreation and domestic travel.

Just six years ago, the leisure market was estimated at \$30 billion annually. Its growth since then has paralleled the spectacular boom in the nation's over-all wealth.

But the truly significant factor in the nation's increased wealth is the widespread sharing of it. More than 30,000,000 American families now have after-tax incomes above \$4,000, a gain of 18,000,000 families just since 1950. By next year there will be some 36,000,000 families in this group. Significantly, they will control something like 60 per cent of the nation's \$135 billion in discretionary income—the money left over after taxes, food, clothing, shelter, and other necessities.

Moreover, the income levels will

Printers' Ink (July 10, 1959), © 1959 by Printers' Ink Publishing Company, Inc.

continue to rise. Predictions are that by 1970 there will be about 25,000,000 families with after-tax incomes over \$7,500. They will constitute 40 per cent of the population and control 85 per cent of the discretionary spending. As the dominant factor in marketing, they make an increasingly alluring sales target for leisure products.

And their leisure time will probably increase, too. In the past ten years, the total weeks of vacation enjoyed by Americans have doubled to 70,000,000. But time away from work is only one dimension. Labor-saving devices around the home, faster transportation to and from work, and the nature of labor itself have also contributed to the boom in leisure-oriented products.

The less exhausting nature of modern work is a particularly significant factor in today's increased leisure activity. At the turn of the century, only 15 per cent of the nation's work force was classified as white collar. Today more than 30 per cent fit into that category, and in another decade the figure will be 40 per cent. Skilled and semiskilled workers are now as numerous as white-collar workers, and will constitute another 40 per cent of the population by 1970. In both groups, exhausting labor is a thing of the past. Technology has devised machines to take the back-breaking strain out of labor in factories and the monotonous drudgery out of most white-collar jobs. These changes in the nature of work have greatly expanded the capacity to enjoy leisure.

In their quest for the good life, Americans apparently are unwilling to

wait. This is evidenced by the soaring spiral of consumer credit for the purchase of leisure products.

Boating, perhaps, offers the best example. Fifteen years ago, a man who asked for a loan to buy a boat would have been thrown out of a bank bodily. Today, banks are courting boat buyers and boat manufacturers with great ardor.

The consumer's natural inclination to spend money for pleasure-giving products gets a skillful push from astute marketers in the field. Here again, boating has probably undergone the most drastic revolution. It has progressed from the "rich man's sport" of yesteryear to one in which 37,000,000 Americans now participate. The greatest growth has been in outboards; there are now some 3,620,000 craft expressly designed for this type of power.

Not too many years ago, an outboard motor was something you put on a flat-bottomed rowboat to go fishing. Skillful marketing changed all that.

Improved technology quieted the motors. Industrial designers were called in to design attractive cowls. A range of colors was provided to attract and influence women. Advertising efforts were greatly stepped up, and were given a new approach. As Howard Larson, sales vice president of Outboard Marine Corp., explains the marketing strategy: "We try to sell boating as a means to more family fun. You can justify the expenditure because the whole family benefits."

Amateur home movie equipment, which has enjoyed a similarly spectacular boom, has soared from sales of

\$60 million in 1948 to \$143 million last year, a gain of 140 per cent or twice the percentage gain in over-all recreational expenditures. One of the leading firms in the field, Bell & Howell Co., raised its own sales up from \$17 million to \$59 million in that period, a 300 per cent increase. Carl G. Schreyer, Bell & Howell's vice president in charge of marketing, notes that there are several factors that have played a part in this growth: the baby boom, rising incomes, migration to the suburbs, increased leisure, and easy-to-use features that have been built into cameras.

The improvements that have made

cameras easier to use have played a major role in the success. As Schreyer explains it: "Our research has shown us that the biggest reason for not owning a camera was that you had to be an MIT graduate to operate it. We fixed it so you don't have to be."

There seems little doubt that the only place for the leisure-time market to go is still up. Precisely how far it can go is difficult to say. Five years ago it was confidently predicted that boating would cross the \$1-billion level by 1959. It has already doubled that figure. Conservatively, then, it's not too much to expect the over-all leisure market to hit at least \$50 billion in the next decade. ♦

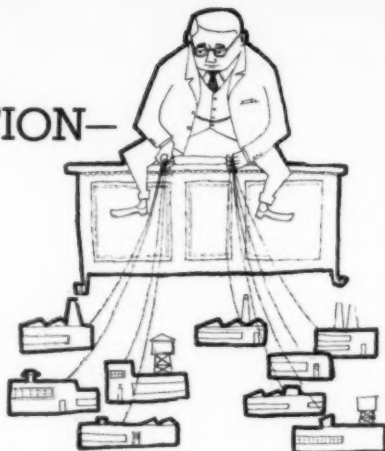
Public Leadership Awards

TO GENERATE THE BEST THINKING on the kind of education needed to improve executive leadership in American public life, The Fund for Adult Education has established a program of awards for the best articles, speeches, and book-outlines on the subject of public leadership. Awards of \$1,000 each for the three best speeches or articles will be given in each of the years 1959 and 1960. These awards will be restricted to articles that have been published and speeches that have been delivered before an audience between January 1, 1959, and December 31, 1960. Six \$1,000 awards will be given for the best book-outlines on the subject of executive leadership in the United States, and commissions of \$8,000 each may be given to one or more award winners to permit development of their outlines into book-length essays.

For purposes of the awards, the term "leadership" encompasses the whole range of positions in which executive decisions and executive actions have public consequences. It would include, for example, elected and appointed executives in federal, state, and municipal governments; corporation executives; members of boards of directors of national organizations; school board members and college trustees; foundation officials; labor leaders; leaders of political parties; executives serving abroad, either in government or private positions; etc.

More information about these awards can be obtained by writing to The Fund for Adult Education, 200 Bloomingdale Road, White Plains, New York.

DECENTRALIZATION— ON THE WAY OUT?



By Edward McCreary

Condensed from Dun's Review and Modern Industry

IF YOU THINK you've seen a lot of changes in business, just stick around a few years," says a senior partner of a top management consulting firm. In one way or another, many top executives are saying the same. And they're not just talking about market shifts and technological changes. Equally significant, though less spectacular, are the sweeping organizational changes taking place today in industry.

For the fact is that hundreds of companies which decentralized for growth during the postwar boom years are now, paradoxically, recentralizing—again, for growth.

Most of them, naturally enough, don't like to call it that. For the past dozen years, decentralization—along with management development, effective communication, and democratic supervision—has been very much in fashion. Among those who, until recently, were loudest in proclaiming its virtues, few now care

to admit having gone too far in their enthusiasm.

"Recentralization is a dangerous word. We'd rather think of it as redefining regions of authority," says one company executive. Other companies speak of "centralizing policy while decentralizing administration." But what it adds up to is that decisions previously handled in the field, or not handled at all, are now being made at headquarters.

In one way or another, dozens of concerns—from giants such as Olin Mathieson Chemical Corp., New York, to smaller companies like S. B. Penick & Company, New York—are busily tightening up their organizational systems. Some of this activity is a natural reaction to decentralization programs that went too far and wound up weakening companies. But beyond this, some new organizational developments are spurring organization change.

Competition and the increased

Dun's Review and Modern Industry (July, 1959), © 1959 by Dun & Bradstreet Publications Corporation.

complexity of business are forcing companies to put more and more emphasis on long-range planning, product development, and research. As a result, a whole flock of new staff groups are arising to take their place at the right hand of top management. These groups collect information and make "suggestions" for the company as a whole. Inevitably, they end up doing much of the planning for—and, in effect, clipping the wings of—nominally autonomous divisions.

All companies, of course, aren't going to recentralize (some never decentralized), but the effort is going on in enough companies to make recentralization an important organizational trend. Lately, consultants with such concerns as McKinsey & Company, Cresap, McCormick & Paget, and William E. Hill & Company have been reporting that direct and indirect recentralization projects are high on their activities list.

Many of the companies that have resorted to one form or another of recentralization faced a unique situation with highly specialized problems. All of them, however, had this in common: They got into trouble by over-decentralizing authority.

Back in the early 1950's, a lot of American companies were swept along too fast by postwar growth, mergers, and expanding new markets to keep any effective control of operations. The safest course seemed to be to give divisions their head and let the man on the job call the shots. "As often as not, it was a case of 'when in doubt, delegate,' and it often worked well," says Everett Smith of McKinsey and Company. But now, as they learn more about

their industries, their markets, and control of expanded organizations, top managers are quietly starting to take hold again.

Often these moves are welcomed by the department and division heads affected. Much of the ambiguity about their jobs is removed, and they are free to concentrate on specific duties. Says the chairman of the board of a major chemical company, "When a division manager, who used to be told merely to 'make as much money as possible,' knows just what sales and growth targets are expected of him, how much money he'll have to operate with, and what areas to concentrate on, he is likely to feel much freer about his job." It is this aspect of reorganization that top managements usually insist on calling a form of decentralization. "But when the word games are over, it's usually a case of headquarters taking over more operating control," says an industry specialist.

Partly because of the enthusiastic build-up they gave the concept of decentralization of authority, management development via delegation, and human relations, many companies wince at the word "recentralization." Often they hedge by noting that what they are recentralizing is policy, not operations. A few, however, ruefully admit that policy today may not mean exactly what it did a few years ago. And both in general management literature and in private talks with top executives, a change in attitude toward decentralized control and delegation is noticeable.

The renascent "hard" school holds that "permissive" or "participative" management, although based on ex-

cellent and democratic ideals, just isn't practicable in the vast majority of companies. The fact is, these critics say, most companies actually are run by the president and a bare minimum of other top executives, who, by their very nature, are not prone to delegate. Much so-called decision-making by middle managers, they feel, is pretty much a pretense. In many concerns, this management feeling already is being translated into action, or soon will be.

Sometimes the trend toward centralization of decisions is virtually unconscious, but it is none the less real. It shows up in the use of special information-gathering staff groups such as the operations research, long-range planning, marketing, and research and development staffs that occupy more and more space in company headquarters. Nominally advisory staff functions, these groups often swing a lot of weight in operations. They are also the means by which top management collects information for decisions it might otherwise leave to divisions or departments.

One of the best examples is the operations research team, which, in numerous companies, not only advises but actually tells divisions and departments what number and type of production runs to make, what inventory levels to keep, what costs to expect, and where to locate warehouses.

Although this advice aids division managers in performing their duties, it also cuts down their area of responsibility and chops the ground right out from under some of their subordinates, who used to coordinate

production before operations researchers entered the picture.

"I never thought of it that way, but I guess we are nibbling away at decision areas that we never used to touch," says a company president, who notes that this trend shows up in other functions besides operations research. In his company, for instance, it is now standard practice to require plant managers to present headquarters with certified cost figures and pay-back estimates on new production equipment they wish to purchase.

Formal long-range planning programs, which many companies are adopting, also tend to have a centralizing effect on both corporate and divisional headquarters. In setting objectives and specific goals, companies make projections of sales, costs, product lines, and capital outlays for all divisions. Much of the actual work is done by division or department people, but it is coordinated by a long-range planning staff, which has an indirect, but usually important, voice in decisions.

Commenting on this, a division executive for a Chicago-based concern notes that five or six years ago headquarters would say, "Well, what do you fellows plan to do?" Now, headquarters is likely to have in mind a complete development plan, which it has been quietly selling to divisions for six months. "They usually take our advice," the head of one large manufacturing company's long-range planning groups says of division management. And a top executive for a diversified chemicals and forest products company adds that, "if the president leans on his staff

people, the divisions know it and listen to them."

In effect, then, although divisions still normally make their own long-range planning and investment decisions, it's likely that someone from headquarters either goes through the step-by-step process with them or reviews it carefully in the light of overall company planning.

Marketing is another planning function that is commonly being centralized. The woods are full of companies that have shown signs of coalescing marketing operations at the headquarters level. To name a few: Olin Mathieson; Federal Pacific Electric Company, Newark, N. J.; Socony Mobil; Elgin Watch Company, Elgin, Ill.; The International Nickel Company, Inc., New York; American Brake Shoe Company, New York. All these concerns have recently set up or enlarged their headquarters marketing staffs.

Another device that is going to make it easier for companies to centralize control of operations is the

office electronic computer. So far, most business computers handle little more than company payroll and occasional sales or production calculations. However, computers are beginning to take over the accounting of all company production, sales, and cost figures. Computers are already being used to program production in some plants. In about 15 years, researchers expect to produce a computer "bright" enough to take over many of the routine decisions that comprise the work of platoons of lower-level managers.

Remember, many organization specialists say, top managers decentralized authority in growing companies not because they necessarily wanted to, but because they had to. They couldn't keep abreast of the details, so they turned the job over to the man on the scene. Now, with staff groups and computer information systems making it possible to routinize previously complex jobs and to assimilate more information quickly, management, quite naturally, has started to centralize again. ♦

Industrial Elder Statesmen

SOME RETIRED EXECUTIVES are regularly kept on as consultants in about 40 per cent of the 278 companies recently surveyed by the National Industrial Conference Board, *Business Week* magazine reports. Some of the retired consultants are given continuing responsibilities, and others get special assignments.

The other companies don't necessarily object to the practice: one-fifth have no living retired officers, and some of the others handle each case on an individual basis. Some of the companies that prefer to make a clean break fear that the retired executive's presence will have a "restrictive effect" on his successor; some report that retirees lose interest quickly; and some feel that a consulting arrangement is unnecessary, since retirement can be delayed if the company wishes.

Management's Cracked Voice

A new mood is growing—one in which many people are becoming suspicious of the most solemn pronouncements from the most respected of businessmen on virtually any subject . . .

By Bernard D. Nossiter

Condensed from Harvard Business Review

WRACKED AND HOARSE from shouting its message in the teeth of changing gales of public opinion, management's voice is faltering. The old formulas are not working. For just as primitive man called on magic to control the caprices of the weather, so has the modern corporation attempted to control its social environment through equally complex techniques. Great gobs of money have been and are still being spent to test attitudes and responses toward everything from new products to old ideas. And, if the answers to test questionnaires fail to support preconceived objectives, even greater sums have often been spent to condition the various publics involved.

This process has created an elaborate witchcraft replete with high priests (public relations experts and public opinion testers), with rituals (brainstorming, market research), with incantations ("business serves the public"), and with a vast literature of holy writ.

Insecure and fearful of a world he feels hostile to him, the modern board chairman—like the prehistoric tribal chieftan—sometimes propitiates

through soft words and sacrificial good deeds, and sometimes curses and tramps roughshod over social elements frustrating his desires. The result of this ambivalence all too often is a slip on the soft soap or an unscheduled roughshod stomp on his own toes.

This matter of a hostile climate of public opinion, of course, is hardly a new problem. But sometimes the weather threatens to get so chilly one must try new ways to warm things up.

The minds of men are more easily manipulated at certain times than they are at others. War and the threat of war always present the ideal soil in which the seeds of irrationality can grow into seemingly sturdy plants. We now appear to be at the end of two decades of just such an era. Since 1940, war and the threat of war have placed a premium on irrational appeals. But there are many signs that this cycle is coming to an end.

A new mood is growing—one in which many people are becoming suspicious of the most solemn pronouncements from the most respected

Harvard Business Review (September-October, 1959). © 1959 by the President and Fellows of Harvard College.

of businessmen on virtually any subject. Management could lose the advantages gained during the 20 years of "favorable" war climate in which industrial production and its managers were viewed as the saviors of the nation.

All around, there are signs that a new cycle of sense is gaining the upper hand. In the November, 1958, elections, the appealing image was the man who suggested he was talking reasonably. It was a bad year for spellbinders, masters of the oratorical flourish, and ham actors. Cool, casual, youngish types who spoke with the accents of reason did far better in both parties.

Madison Avenue, all the tired jokes aside, is putting some trained fingers to the wind. So it is no accident that the soft sell is more in vogue than the hard sell: that wit and an absence of pretentiousness—necessary ingredients of reason—are showing up in ads for dog food, beer, and other commodities.

Once it knows which way the wind is blowing, management need not yell disquietingly—but can gain by speaking sensibly. Self-interest alone, considerations of ethics aside, is sufficient now to justify more honesty. The longer any pillar of society insists that green is red or that all Americans love big cars, the quicker will society hunt up some new pillars.

Let us look at some examples of the dangers inherent in misgauging the current climates of opinion.

Among the major illusions now being peddled by some managements is that business is not now in politics and must get into it with both feet. Business, of course, is hip-deep in

politics, and this is no arcane mystery understood only in Washington. Every barely literate person understands that men of substance make substantial contributions to political parties; that their lawyers run for office; that corporations maintain Washington offices; and that the business community calls on friends in the legislative, executive, and professional political hierarchies in an unsystematic but pervasive way. The businessman's pretense of nonparticipation is as absurd as that practiced by a few union leaders who proclaim that they are not in politics.

An allied fantasy is that Congress is dominated by organized labor hell-bent on the road to socialism. The socialists disappeared from their marginal position in the labor movement a generation back. From James Hoffa to Walter Reuther, there is a practiced commitment to the free enterprise and private property system. Today's quarrels are not ideological but over the distribution of the pie.

What is asked for in the less revolutionary calls for political action by businessmen, of course, is a more coordinated attack on political problems. This has a surface logic and an engineer's neatness—but is it really as sensible as the quiet, informal arrangements now made? Could it create a counterorganization on a more effective scale by groups with more votes?

Arnold H. Maremont, chairman of Allied Paper Mills, apparently asked himself this question when he wondered out loud what the employees' reaction would be to an open political drive by business: "Seeing the officers use company funds and

time for political action, will they not sharpen their own demands and opposition?" The higher management tries to fly politically, the stronger the winds it has to buck.

Another way to lose friends, voters, and lawmakers is to use threats. People can be pushed around on New York's subways, but they do not like it. Corporate threats and corporate hobgoblins are unwelcome too.

Look at the steel industry, which in the fall of 1958 launched an expensive advertising campaign against the evils of inflation and another wage increase. It pounded these themes with all the vigor a hard-sell drive can muster. Apparently the industry believed that when it raised prices again, the public would automatically blame the union. All it did, actually, was stir up a counterblast that confused many. The industry sold inflation evils so strongly that some legislators and many citizens were convinced that steel prices ought not to be raised at all. Convictions can lead to actions. In terms of public opinion, the price and wage options left open to the steel management were narrowed by its own campaign.

Many corporations spend large amounts to humanize their image. National manufacturers encourage their branch executives to sponsor Little League teams, play active parts in Community Chests, join civic betterment organizations, and the like—all to promote the corporation's good will. But this is a phantom, if harmless, pursuit. Most people have trouble summoning up a picture of a folksy Consolidated Edison Company, no matter how colloquial the printed

words over Con Ed's construction barriers.

People are prone to visualize a corporation in terms of its head man, just as they think of a nation in terms of its president, prime minister, or king. But corporation executives cultivate anonymity; for all their speeches and public appearances, little is really known of them.

I am not suggesting that they be merchandised like movie stars; rather, that they be more open, less guarded, more receptive to frank talk. The press and public, rightly or wrongly, have an image of these corporations and the men who symbolize them as austere, remote, suspicious, and evasive. In brief, they act like personages with something to hide instead of responsible leaders in a society that, for better or worse, has considerable potential control over them and their way of doing business.

When businessmen are called to Washington for consultation or for testimony, their behavior often resembles a child's tantrums—they are pouting and self-righteous. Yet a lofty attitude and patronizing contempt can build up support for the very things the businessman strongly opposes.

One business lobbyist, a shrewd observer and able performer, pointed out, "These executives have contempt for what happens here in Washington. They believe that reality begins and ends in New York, and that they are so impregnable they can dismiss all this."

Perhaps the executives are right. But the chance that they are wrong is great enough to suggest a remark-

able lack of foresight. If a serious discussion of a potentially explosive bill can weaken its chances of passage, what is gained by a performance that dismisses the measure and thus increases support for it? A corporation can ignore its publics or their representatives only at its own peril.

There is a remarkable degree of magic pretense in the public line of many executives. Problems, like droughts, will not simply vanish, no matter how many paid witch doctors beat the drums.

Technological displacement is as old as capitalism. When social scientists, legislators, and union leaders worried publicly about the effects of automation on employment, executives called up their PR genies. Soothing incantations were concocted to tranquilize the public: "Producing the new machines themselves will require enough new workers to make jobs for those who have been displaced; automation is a promise," and so on.

Nevertheless, tranquilized or not, there were auto, steel, meat packing, and machinery workers who were laid off permanently. Inevitably, unions

sought for a solution. They demanded shorter work weeks and more benefits. The more management tried to cut costs through labor-saving devices, the more the unions pressed to protect displaced workers. The process is by no means complete today; ultimately, after struggle and waste, some of labor's demands will be satisfied.

In time, the problem will be thought through and appropriate answers will be found, but, by then, business may do some choking in its smoke screen of once-convenient PR propaganda.

For some time to come, then, it may pay executives to think through the meaning of enlightened self-interest, and to do so in terms of the long-range picture. Reason and accommodation are integral methods of a company's internal operation. To jettison them in external relations at the very hour when manipulation is suspect, when more and more the public appears to demand reason, could create problems of a larger magnitude than any executive, no matter how clever he may be, can successfully solve. ♦

Less for Fringes in '58

REFLECTING THE RISE IN UNEMPLOYMENT early in 1958, caused by the business recession, payments by private industry for employee welfare benefits last year were slightly below the 1957 level. This was the first year-to-year drop since 1933.

Benefit payments fell to \$13,760,000,000 in 1958 from the 1957 peak of \$13,774,000,000. However, these fringes or so-called wage extras were sharply above the \$12,323,000,000 paid out in 1956 in such supplements to wages.

—*The New York Times* 8/22/59



SUPERVISORS COME UP IN THE WORLD

By Louis Cassels
and Raymond L. Randall

Condensed from Nation's Business

DURING the next ten years, business may put as much emphasis on supervisory development as it has given to executive development in the past ten years. The reason for this trend is obvious. The first-line supervisor performs an indispensable management function, but in the past he has seldom been selected, trained, or treated like a manager. The basic philosophy behind the development programs now emerging in industry is that the supervisor's job must be upgraded in the direction of true management.

Here are some specific suggestions, drawn from the experience of pioneering companies and from recent management research, on how these principles may be applied in any organization, large or small.

Clarify the supervisor's status: Several attitude surveys have confirmed that a supervisor's standing with his subordinates, and his ability to get work done through them, is directly

related to the way higher management treats him. If the workers discover that he is merely an errand boy, they will scornfully by-pass him and find some other leader—often the union shop steward—to serve as their point of contact with management authority.

You can raise the supervisor's prestige with his work group by giving him some of the status symbols associated with management. The psychological value of such gestures will be entirely lost, however, unless they are accompanied by a genuine increase in the supervisor's authority, especially in such vital areas as hiring, firing, promotion, and pay.

Simplify his work: The U.S. Army, in a recent survey of civilian employees, found that the average supervisor is required to do 41 different jobs. It also found that most of these jobs are petty, time-consuming, and have very little connection with successful management of a unit. An

Nation's Business (August, 1959), © 1959 by *Nation's Business*—the Chamber of Commerce of the United States.

industrial firm, in a somewhat similar study, learned that its supervisors were spending from one third to one half of their time filling out reports and performing other routine paper work for the front office.

Freeing the supervisor from some of this detail is an obvious necessity if he is to have enough time for organizing and scheduling work and performing other managerial functions. One solution is to provide each supervisor with a clerk, as IBM and other companies have done. Another fruitful possibility is to eliminate a few dozen forms, records, and reports that aren't really necessary.

Raise his pay and give him a fair opportunity for promotion: The prevailing practice in American business is to pay a supervisor from 10 to 15 per cent more than the highest-paid production worker in his unit. Everything that business has learned about executive compensation argues that this pay differential is an inadequate incentive for taking on heavy managerial responsibilities.

The incentive problem is aggravated if the supervisor feels that he has little or no chance for promotion into middle and upper management. Attitude surveys reveal that many supervisors do feel this way—and with good reason. They see a growing tendency to reserve higher positions for college graduates brought into the company as management trainees.

James H. Taylor, personnel manager for Procter & Gamble, says this promotion barrier is not the result of snobbishness, but simply reflects the increasing complexity of modern management.

Management consultant Peter

Drucker feels differently. "The best preparation for most of the technical jobs in industrial engineering, in quality control, in production scheduling is successful performance as a first line supervisor," he contends. "The able supervisor can acquire in a training course whatever specialized technical knowledge is needed."

Intelligent use of human resources demands that supervisors be clearly included among the candidates for executive advancement, and that any man who has demonstrated a basic grasp of the art of management should be given every opportunity to remedy any educational deficiencies that stand in the way of his promotion.

Select supervisors for management ability: Picking the best production worker in a unit to fill a vacancy as supervisor — a common practice in many firms today—is a hazardous procedure. He may be a whiz at operating a machine, but a complete flop at getting work done through others.

The human relations approach to choosing supervisory candidates is more sophisticated, but in the long run just as unsatisfactory. The ability to get along well with fellow-workers is one necessary qualification for a good supervisor, but by no means the only one. A hail fellow who is reluctant to exercise authority, or who shows no aptitude for such tasks as planning and scheduling, will never make the grade, no matter how popular he is with the men.

A number of companies have done extensive research on the problem of choosing supervisors. They have developed a variety of tests, question-

naires, depth interviews, and other appraisal techniques to determine first, whether a man has the capability of becoming a manager, and second, whether he really wants to assume leadership responsibility.

Adapt his training to his job and his needs. One of the notable features of the new supervisory development programs is the big effort to keep training job-related. This is accomplished by such measures as:

1. Bringing the job into the classroom. Instead of listening to lectures on management principles, supervisory trainees work out the principles themselves through guided discussions of actual problems.

2. Using line managers as instructors. There are at least four good reasons for this: It saves money; it is a development opportunity for the managers; it opens a new and valuable channel of communications between higher management and supervisors; and it persuades supervisors that they are getting practical, workable guidance from a man who knows the score.

3. Using the job itself as a training device. A few companies have dispensed altogether with training courses in the belief that supervisors, even more than executives, can best learn by doing through special assign-

ments, job rotation, and coaching by experienced superiors.

4. Tailoring development to the specific needs of the individual. This is even more important for supervisors than for executives, since they vary in educational background from those who never went to high school to those who hold Ph.D. degrees.

5. Emphasizing the supervisor's responsibility for self-development. This idea, a keystone of executive development philosophy, has only recently been widely applied to supervisors. Its success will depend on the readiness of top management to reward supervisors for distinctly managerial skills (such as developing their own subordinates) that may not be directly reflected in production.

6. Making judicious use of company-financed training at outside institutions.

This new approach to supervisory development may sound prohibitively expensive. But the organizations that are leading the way are convinced that better management at the crucial contact point represented by the supervisor is not a luxury, but a necessity. They also believe that the over-all personnel costs need not be increased, but may actually be lowered by upgrading the supervisor and his job. ♦

IF A MAN HAS A TALENT and cannot use it, he has failed. If he has a talent and uses only half of it, he has partly failed. If he has a talent and learns somehow to use the whole of it, he has gloriously succeeded, and won a satisfaction and a triumph few men ever know.

—Thomas Wolfe

The Right Way to Use APTITUDE TESTS

By R. P. Brown

Condensed from Industrial Bulletin

RECENTLY a young woman just out of college applied for a job in the home office of a large manufacturer. Everyone who interviewed her was favorably impressed with her intelligence, poise, and grooming. She was given a series of aptitude tests, on all of which she scored well into the superior range.

Hired to work in the personnel office, she was started off on clerical tasks. Her work was outstanding—with one exception. Whenever she was sent to the file room to get a standard file card for interviewers in the office, she was gone for an inexplicably long period of time. Careful observation of her work failed to uncover any obvious explanation for what seemed to be loafing on the job. Then one day, clearly exasperated, she exclaimed, "I wish we had some filing system besides those darn cards!"

Investigation showed that the girl was experiencing considerable difficulty in separating and pulling individual cards. She was then given a "finger-dexterity" test. She scored a virtual zero. This seemingly unimportant aspect of her job was giving her a poor work record.

Practically everyone who has used aptitude tests knows of similar or re-

verse experiences—when tests did not select persons who were later found to be competent. This incident illustrates one of the major reasons that aptitude tests often fail to predict later performance. The "performance" often is not described properly.

Before aptitude tests can be used effectively, the user must know *what* is to be predicted. Each aptitude test measures a rather narrow ability, and will predict successfully only if that ability is related to performance.

As an example, take the recent experience of a machinery-manufacturing company in manning a new plant. The company, which wanted "learners" for skilled trades, decided to select them on the basis of an aptitude-test battery that had been used previously, in the same area, to select skilled-trades apprentices.

Using this battery, the company selected 40 men. At the end of a year every one was rated as a satisfactory employee by his foreman.

One case of the 40 was particularly significant. This applicant, who had been a truck driver, made the highest scores of those who took the tests. A special effort was made to find him particularly difficult and challenging work, and he was finally assigned to learn instrument-repair work. Recent-

Industrial Bulletin (July, 1959), New York State Department of Labor.

ly, his foreman said, "He has learned more about instrument-repair work in eight months than men I have who have been repairmen for ten years. If I have a tough job, I put him on it."

This case illustrates two important points concerning the use of aptitude tests. First, it is necessary to know what aptitudes that can be measured are of importance in learning a specific job or trade. For the skilled trades involved in this particular case, certain minimums of numerical, spatial, motor, and mechanical aptitudes are required for efficient learning and performance.

Second, testing can often uncover unsuspected or unnoticed ability. There are a great many aptitudes that cannot be assessed by interview or by knowing the applicant's previous experience. People who are superior in certain abilities often do not realize how superior they are—they have had no opportunity to compare themselves with others.

Aptitude tests have definite limitations, of course. Essentially, aptitude tests will measure certain specific characteristics accurately and quickly. But tests do not exist for all characteristics, and the characteristics that can be measured may not be the most important in learning a particular job.

The personnel director of an engineering firm recently said, "We formerly used aptitude tests to select clerical and drafting trainees, but we gave it up because we found that they were utterly useless when it came to showing how well the applicant would get along with others. The tests showed technical ability but not

how hard these people would try to learn. We use nothing now but personal interview."

Yet we should not complain because aptitude tests fail to do something they were never intended to do in the first place. To get a rounded picture of a person, one must not only test aptitude, personality, and interest with a well-designed test battery, but also use interviews and thorough studies of the applicant's personal history. Tests merely provide objective information about certain aptitudes, interests, and traits; they do not cover all the varied aspects of personality.

Although there is no cut-and-dried success formula for using aptitude tests, there are some general principles that should be followed.

First, does a problem exist that can be corrected with aptitude tests?
High turnover . . . low quantity and quality of work . . . high scrap rates . . . poor attitudes and morale . . . difficulty in finding suitable personnel for promotions from the work force . . . high accident rate—these are some of the problems that may exist.

If such problems can be related to the caliber of the workforce, aptitude tests very likely can help. But first check whether supervision, equipment, working conditions, or some other factor is not the primary source of any problem. Once it is established that employee characteristics are the root of the problem, aptitude testing can be considered as an aid toward solution.

The next step is to *make sure qualified personnel establish and administer a testing program*. No employer would dream of putting a personnel clerk in an engineer's job, but

often such clerks are given the task of administering a testing program that is just as difficult and complex as an engineering problem. Trained test technicians require higher salaries, but the investment will pay for itself by avoiding lost motion and insuring a well-designed program.

Before actual testing begins, it is necessary to *specify what the tests are trying to measure*. In other words, what aptitudes are required for adequate learning and performance in each particular job? Ordinary job descriptions generally are inadequate—descriptions must cover actual performance items. Usually, test technicians will insist upon objective criteria for evaluating individual per-

formance, such as quantity and quality of production.

Selection of the tests to be used should be in the hands of qualified people. There are hundreds of tests available and their exact use cannot be determined just from their names, descriptions, or appearance. Only trained people who are familiar with the complexities of these tests should be relied on to select those which will provide the best results.

A last important principle in using aptitude tests is to *test the tests*. With a suitable performance measure available, individual tests scores can be related to performance scores to produce an exact evaluation of any test's predictive efficiency. ♦



"Can you use a gal?"

BRIEF SUMMARIES

of other timely articles

GENERAL

HOW TO PRACTICE PRACTICAL POLITICS. *Management Methods* (22 West Putman Avenue, Greenwich, Conn.), July, 1959. 75 cents. What can and should businessmen do, politically, to improve the business climate in their communities, states, and the country as a whole? At a recent American Management Association conference, seven speakers—including Republican Chairman Morton and Democratic Chairman Butler—answered this question, and their ideas, based on personal experience and experiment, are presented in this article. Here are two of the ideas, submitted by the Republican and Democratic Chairman, respectively: (1) As with military service, give people time off for political service, and (2) invite candidates of both parties to tour your plant and discuss ideas.

ACHIEVING ADMINISTRATIVE COMPETENCE—THE EXECUTIVE. By Robert N. Hilkert. *Michigan Business Review* (University of Michigan, Ann Arbor, Mich.), July, 1959. Gratis. In this discussion of what constitutes administrative competence, the author stresses the ability to delegate, but points out that the final responsibility rests with the executive, who must exercise good judgment and take calculated risks on his subordinates. Maintaining that overconfidence is better than timidity in decision-making (wrong decisions can be rectified with further action), he provides a list of characteristics of a good business leader: (1) technical competence, (2) broad intellectual outlook, (3) high sense of honor, (4) attention to the public interest, and (5) understanding and appreciation of human relationships.

THE FORTUNE DIRECTORY OF THE 500 LARGEST INDUSTRIAL CORPORATIONS. *Fortune* (9 Rockefeller Plaza, New York 20, N. Y.), July, 1959. \$1.25. Is corporate bigness a moderating force during major swings in the economy? The answer is no, judging from *Fortune's* directory of firms that account for more than half the nation's manufacturing and mining output—the 500 biggest U. S. industrials. The 500 were hit just about as hard as smaller firms by the recession—their total sales of \$176.8 billion in 1958 were down 6.1 per cent from 1957 and their profits dropped 17.8 per cent, from \$11.7 billion in 1957 to \$9.6 billion last year. Despite sliding profits, however, the 500 increased their total investment from \$95 billion to \$101 billion last year.

BRITAIN: AT LAST, ENOUGH TO GO AROUND. *Business Week* (330 West 42 Street, New York 36, N. Y.), July, 4, 1959. 50 cents. For the first time in this century, the British last year earned more from exports than they spent for imports, according to the author, who attributes Britain's new financial security to control of inflation; decrease in import prices; expansion of domestic food production; and, most important, the switch from old industries such as textiles to new ones like business machines and nuclear reactors. Two threats are described that preclude overconfidence: one is Common Market competition, particularly from Germany, whose economic stability permits price-cutting abroad; the other is that a labor victory in the forthcoming elections might result in inflationary wage increases and nationalization of the steel industry.

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NATIONAL INCOME AND PRODUCT ACCOUNTS OF THE UNITED STATES IN 1958. *Survey of Current Business* (Superintendent of Documents, United States Government Printing Office, Washington 25, D. C.), July, 1959. 30 cents. The many tables of statistics in this comprehensive report provide a record of the nation's economic performance in 1958 based upon the full set of national income and product data now available. In addition to 1958 figures, comparative figures for 1956

and 1957 are given in such categories as gross national product, national income by type of income, national income by industry, personal income, personal consumption expenditures by type of product, per capita personal income by states and regions, foreign transactions in the national income accounts, sources and uses of gross savings, and net changes in business inventories. In some of the above categories, comparative figures are also given for the years 1929-58.

OFFICE

TODAY'S OFFICE—GETTING SET FOR TOMORROW'S OPPORTUNITY. *Dun's Review and Modern Industry* (99 Church Street, New York 8, N. Y.), September, 1959. Reprints 30 cents. Critical forces now shaping up in office operations promise during the next decade to revolutionize the way management gathers information and controls corporate activities — and companies must now move to harness these forces to stay competitive. This special report includes articles on (1) a survey of 285 companies on what's wrong with present office operations and what can be done about it; (2) applying scientific measurement to office operations; (3) a roundup of practical ideas for office improvement; (4) evaluating investments in office equipment; and (5) improving mailroom operations.

THE NEW AMERICAN OFFICE. By Spencer Klaw. *Fortune* (9 Rockefeller Plaza, New York 20, N. Y.), September, 1959. \$1.25. Terms such as prestige wall, conversation area, and engineered credenza abound in the vocabulary of today's office designer, who plans offices with emphasis on comfort and elegance, says the author, noting that the sybaritic suite is in style: one company president has a "sun room" where he can recline on a red-and-gray couch beneath infrared and ultraviolet ceiling lights. Major office design trends discussed are standardization (for all but top-level executives); flexibility (nearly everything is movable except the elevator bank); and modern furniture (except for conservatives like the company that remodeled its offices in eighteenth-century English style).

MARKETING

HOW TO WIN OR LOSE SALES AT THE POINT OF PURCHASE. By Robert N. McMurry. *Journal of Marketing* (27 East Monroe Street, Chicago 3, Ill.), July, 1959. Reprints \$1.00. Although manufacturers have spent huge sums on market research in finding out what the public wants, these scientific methods haven't paid off—particularly on "big-ticket" items like home appliances and cars—because of inadequate research into what actually happens at the point

of purchase, the author maintains. Using a case history, he points out areas in which research is needed, such as the buyer's unconscious motivations, and stresses the importance of using indirect probing techniques (for example, showing a picture of a woman in front of a stove to a housewife who must fill in what the woman is thinking) rather than direct ones alone, to uncover the buyer's real needs and problems—even those of which he may be unaware.

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HOW TO SELL MORE TO THE BUSINESS MARKET. *Management Methods* (22 West Putman Avenue, Greenwich, Conn.), August, 1959. 75 cents. For companies that sell products or services to business, results of the research study presented in this article reveal helpful information about which segment of their market offers the biggest profit potential, how to identify it, who controls it, and how to sell it. One significant statistic is that fewer than 10 per cent of the total number of manufacturing plants account for more than 40 per cent of the capital expenditures—and these companies are not the giants, but rather the 48,000 middle-sized companies with between 100 and 1,000 employees.

THE REGIONAL SALES MANAGER: LOUD NEW VOICE IN ADVERTISING. *Sales Management* (630 Third Avenue, New York 17, N. Y.), August 21, 1959. 50 cents. In a recent survey of sales executives in 630 companies, two out of three reported the increasing influence of regional sales managers in advertising planning and media selection, with the result being more effective advertising, according to this article,

which quotes the comments of various respondents. They generally agreed that the regional sales manager knows the peculiar characteristics, media, and competition of his regional market better than anyone at headquarters, and some even consult him on national advertising (he recommends 22 per cent of the ad themes and 21 per cent of magazines).

SPECIAL TECHNIQUES FOR SELLING TO COMMITTEES. By Lassar Blumenthal. *The American Salesman* (355 Lexington Avenue, New York 17, N. Y.), July, 1959. 50 cents. Careful planning and knowledge of group psychology are the chief tools of salesmen who deal with buying committees, the author declares in this step-by-step discussion of how to set up and execute such a sales presentation. The steps include talking with the individual members before the meeting to determine their needs; making contacts (with the group's secretary, for example) to find out who has the strongest personality; rehearsing major points; introducing the product generally, then following up with details; and allowing members of the group to interrupt with questions.

FINANCIAL

DEPRECIATION REFORM: (1) WHAT DOES BUSINESS WANT? By Ray M. Powell; and **(2) CURE FOR RECESSIONS?** By Donald F. Istvan. *Business Horizons* (Indiana University, Bloomington, Ind.), Summer, 1959. Reprints \$1.00. These two articles present an analysis of tax depreciation allowances based on interviews with 150 top financial officers in 51 firms. The first article discusses current methods for coping with the tax depreciation problem and offers proposals for a better solution; the second examines the question of whether changes in tax depreciation methods can be used to mitigate the effects of short-run business downturns.

WHAT WE CAN DO ABOUT TAXES. *Fortune* (9 Rockefeller Plaza, New York 20, N.Y.), July, 1959. \$1.25. For this symposium, *Fortune* magazine invited thirteen tax authorities to comment on its recently completed series of articles criticizing our present tax system and outlining a program for tax reform. Representing a wide spectrum of opinion (contributors come from industrial organizations, labor, the law, state government, Congress, and universities), the comments of these men include many additional suggestions, some criticisms of *Fortune's* program—and unanimous agreement that our present tax system is in dire need of reform.

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RESEARCH AND DEVELOPMENT

ORGANIZED DREAMING: HOW FUTURISTIC MODELS PAY OFF. By Melvin Mandell. *Dun's Review and Modern Industry* (99 Church Street, New York 8, N. Y.), July, 1959. 75 cents. What benefits does a company hope to get out of building futuristic models of its products? According to companies that have such programs—and there are more and more of them—they help to intensify market research, break down public resistance to radical change, stimulate desire for new products, project advanced thinking as a company asset, stimulate design staff, build morale of all employees, stimulate top management in long-range thinking, and develop new uses for raw materials products. The author discusses three kinds of futuristic designs: (1) highly promotional projections that the company

has no plans to produce; (2) pre-prototypes that will influence products the company may shortly turn out; and (3) designs of end products that use a supplier's materials.

PLASTICS FOR THE DESIGNER. By Robert Rockwood. *Industrial Design* (18 East 50 Street, New York 22, N. Y.), July, 1959. \$1.50. Intended as a guide for designers who want to know what synthetic materials are available to them and how they compare with each other, this first of two articles on plastics includes a detailed explanation of the forming methods of the two plastic families — thermosetting and thermoplastic materials. Members of each family are listed with their properties, available forms, end-product applications.

PACKAGING

PACKAGING TO CURB PILFERAGE. *Consumer Packaging* (60 North Michigan Avenue, Chicago 2, Ill.), August, 1959. \$1.25. With estimated super-market losses from pilferage at \$3 million annually, another function of packaging—pilferproofing the product—has been getting serious attention from manufacturers, reports this article, which traces the evolution of a pilfer-proof package for Ban, a Bristol-Myers product now protected by a new form of thermoplastic packaging called "Stretchpack." Manufacturers interviewed on packaging techniques offered the following suggestions: (1) Skin-package, blister-package, or staple the product to paper-board, instead of slipping it into die-cut cards; (2) place premiums inside the package when possible; (3) use cellophane bundling for small items like gum and candy; and (4) place price labels inside film packages if feasible.

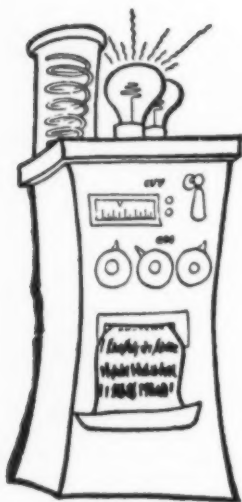
HOW PACKAGING CAN LIFT YOUR PROFIT TWO WAYS. *Factory* (330 West 42 Street, New York 36, N. Y.), July, 1959. \$1.00. Plant packaging techniques can bring in greater profits by reducing costs and increasing sales, according to this article, which offers 15 tips from packaging experts and describes how the American Chain and Cable Co. (York, Pa.) saved \$40,000 per year by evolving a triple-threat solution to a packaging problem: (1) replacing wire-bound boxes with corrugated cartons to save 50 per cent on materials; (2) standardizing box sizes to reduce labor, inventory, and handling costs; and (3) developing an attractive, consistent box design to boost merchandising appeal. Stressing the importance of a cooperative spirit among departments for the free exchange of packaging ideas, the article traces 14 case histories of successful package modernization.

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A new digital computer has been built that will think like a man, even making human errors.—*News Item.*

THINK OF IT

BY RICHARD ARMOUR



Comes now a digital computer
Astute as man, but not astuter,
That thinks a complex problem through
Precisely as we humans do.

They've built such think machines before
To do, and quick, some highbrow chore,
But never one whose thinking bordered
Upon the fuzzy and disordered,

One that will sometimes skip a digit
Because of random thoughts of Brigitte;
One that, when it is somewhat tight
(Not just wound up), can't get things right;

One that grows tired—a second-rater
That puts things off till sometime later,
That tends to daydream, idly blinking,
And think up ways to keep from thinking.

We should, I guess, give praise to science
For making such a fine appliance,
Though I'm inclined to feel, somehow,
We're overstocked on these things now.

A Social Philosophy for the Businessman

(Continued from page 8)

that our present economic system with its vast numbers of workers and relatively few businessmen could exist for long without a strong and independent labor movement. This does not argue for the unionization of all workers; the needs of the economy and the interests of workers themselves are best served by a "mixed" system. Organized labor should be strong enough to protect its members and to keep all managements, unorganized and organized alike, alert to the needs of their employees. But total or even substantial unionization of all workers would result in such an overwhelming concentration of economic power as to represent a serious threat to the institutions of a free society. The interests of workers—all workers—as well as society are best served by a labor movement that is strong enough to be a significant force, but not so strong that it can impose its will without hindrance or, in the security of its strength, neglect the concerns of its members.

The emergence of a strong labor movement, with power already greater in some respects than would ever be permitted business, has created serious problems of its own. These are not relevant, however, to the purpose of the present discussion, which is simply to note that one consequence of the labor movement has been to help reassure workers and the public that the economic power of business will not be used for narrowly selfish purposes. In the context of a discussion of liberalism and conservatism, it is perhaps worth noting also that in many respects the labor movement is an essentially conservative force concerned with resisting changes initiated by business.

THE RACIAL PROBLEM

There is need for business to join in the support of policies that will contribute to the long-range health of the society as a condition for the long-range security and opportunity of business. A case in point is the status of the Negro. Although Negroes have made remarkable progress in this country during the last hundred years, they are still not full participants in the good things of American life, and this lag represents a hazard to business. The hazard is not merely the lower and more uncertain per capita purchasing power of

the Negro market; of greater moment is the underutilization of the human resources of the Negro population, arising in part from lack of adequate educational opportunities but more importantly from lack of sufficient incentive for the Negro to make the most of his capacities.

A more subtle but far more dangerous consequence of racial discrimination is the schism it creates in the body politic. A proletariat—which Toynbee defines as a group that is “in” but not “of” the society—is always a threat to social stability. The only group that fits this description in America today is the Negro, and he fits it only too well. If we continue to refuse the Negro full participation because of his color, and thereby continue to emphasize his color, we must not be surprised, as he gains political strength, to find him behaving first as a Negro and only secondarily as a full-fledged citizen. If he is denied the white man’s opportunities, he may seek to take some of the white man’s power away from him. This he might well be able to do, considering the high concentration of the Negro vote and its susceptibility, through heightened race consciousness, to demagogic appeals and boss control.

BUSINESS AND DISCRIMINATION

Business has a stake in helping avoid such a schism. In a real sense, only business is in a position to deal positively with some of the underlying forces. There are many aspects to the problem: education, housing, acculturation, prejudice in all its forms and manifestations. The economic aspect, however, is fundamental, and this the businessman can do something about by providing more nearly equal economic opportunity on a basis of individual merit without regard to race.

An industrial economy provides a better atmosphere for working out the problems of relations between the races than a nonindustrial. This is clearly seen, for example, in the handling of school integration problems in the South. It is significant that where business groups are powerful, as in North Carolina and Florida, businessmen tend to caution moderation on the part of political leaders and to keep in check some of the more rabid forms of racial demagoguery. Because industry needs stability, new southern industries tend to locate in areas where there is the best promise of avoiding severe

racial tensions. In both the South and the North, it is likely that in the long run industry will provide the framework within which can be worked out some reasonably satisfactory solutions for the most intractable single problem of American society, the relations between the races.

ENDS AND MEANS

Unfortunately, business has too often allowed other groups to assume the initiative in areas of economic and social policy. And because businessmen have been opposed to many of the specific proposals advanced in the name of liberalism, they have been forced into a position of pseudoconservatism that seriously distorts their true role. Moreover, by resisting programs advanced under the guise of promoting the public welfare, business has permitted itself to appear as opposing the public welfare for the sake of its own self-interest. The resulting image has hardly narrowed the gulf between business and the public or strengthened the leadership of business on social issues.

The argument of the businessman with those who seek to further courses of action to which he is opposed is not an argument between conservatism and liberalism; neither is it a question of acting or not acting in the face of urgent social problems. Properly conceived, the argument is simply one of method. If the businessman has a realistic grasp of the place of business in society, he cannot be blind to the need for action on many fronts: to preserve public confidence in the business system, to mediate the stresses and strains of a dynamic economy, to facilitate the processes of innovation. The businessman, however—if he has not been too badly misled by his assumed conservatism with its implied commitment to the status quo—has his own ideas about the kind of action that ought to be taken.

Those who wear the mantle of liberalism are likely to think primarily in terms of government action when dealing with problems requiring attention. Businessmen, on the contrary, are likely to show a strong preference for voluntary forms of action. The so-called liberal often seems to care little for costs, in contrast to the businessman, who has been trained in a discipline where outgo cannot long exceed income. Such a liberal tends to think primarily

in terms of ends without too much regard for means, whereas the businessman recognizes the need for carefully fashioning means to ends; the one looks toward final results, the other toward balancing costs and benefits. The so-called liberal is likely to seek quick, easy solutions—"pass a law"—that may grossly oversimplify or miss the real heart of the problem and perhaps create serious complications of their own. The businessman is more likely to be concerned with the concrete reality of problems and their complexities and to have greater faith in the potentialities of people and of free institutions to work out effective solutions without undue outside intervention.

ACTION — OR REACTION?

In this struggle the businessman finds himself at a disadvantage. If he opposes a massive public works program to alleviate unemployment, he is charged with lack of concern for the unemployed. If he opposes a mammoth public housing program because of its cost, he is charged with being more interested in money than in people. If he urges that economic adjustments be allowed to work themselves out through free market processes, he is charged with having no policy except a policy of drift. If he opposes high and rigid price supports for agriculture, he is charged with callous unconcern for the plight of the farmer. If he expresses anxiety over the growing power of organized labor, he is accused of wanting to destroy the labor movement. If he argues for methods and rates of taxation that will be less punitive to business and more favorable to economic growth, he is charged with greed for profits—a charge that carries greater weight because of his own professed commitment to self-interest as the rationale of business life.

Businessmen must find ways for presenting the courses of action they espouse in a manner that will communicate their concern for human values and not merely the interests of business. This will require greater initiative in putting forth proposals rather than simply reacting to the proposals of others. It means greater alertness to emerging social and economic needs, and willingness to act before the pressure of events forces action or before the situation develops to a point where demands for drastic and far-reaching action command wide public support. It also means willingness to consider concrete measures, for these are easiest for the public to grasp and

understand. Business must be concerned with the forms of its programs and not merely their substance, because form largely determines communicability.

What needs to be communicated is not only the technical nature of the problem at hand and its proposed solution, but above all the attitude of concern of those doing the proposing. Within a company, the effectiveness of employee relations policies depends not only on the policies themselves, but on what they mean in terms of management's attitudes toward those in its employ. So, too, in the larger field of social policy. Business needs to promote a better understanding of the lines of action it supports, but it needs also to demonstrate—not by words alone, but by the nature of the action itself—its concern for human welfare.

THE ROLE OF GOVERNMENT

This may call for legislation in specific cases, and the businessman must learn to overcome some of his traditional distrust of government *per se*. If nongovernmental solutions are available, there is great advantage in using them, and much of the businessman's effort should be directed toward finding or developing such solutions and applying them with vigor and effectiveness. There are circumstances, however, under which recourse to government is unavoidable or simply the most efficient method of procedure.

The real question is the manner in which government acts. For example, with respect to such pressing current problems as the maintenance of high levels of employment, the restoration of agricultural prosperity, the preservation of industrial peace, and the provision of more adequate health and medical services, the great question of public policy is whether to attempt to set things right by direct governmental fiat or to utilize government as a means for aiding in the creation of optimum conditions in which a free citizenry can deal with the problems themselves.

In the field of economic policy, the need is to strengthen the ability of private enterprise to perform its economic functions. Too often the effort has been made to find some kind of substitute, usually in the form of government intervention. Too often, also, in the pursuit of aims that in themselves may be good, an inadvertent consequence may be the further shackling of private enterprise,

thus requiring still further intervention by government. While it is important to provide reasonable protection for the unemployed, it is even more important to promote policies that will facilitate the absorption of the unemployed through vigorous economic growth. This may require action in areas with little obvious relation to unemployment as such; for example, modification of the tax laws to encourage capital formation. It is ironic to see policies put forward in the name of liberalism which would further impede the financing of the huge capital investments required to maintain a constantly higher standard of living and to provide employment for an increasingly large work force. It would be much more realistic—and much more in keeping with any meaningful concept of liberalism—to seek means for capitalizing on the dynamics of free economic institutions.

SOLUTIONS THAT SOLVE NOTHING

The so-called liberal often fails to examine what people need in the light of what they can afford. Unquestionably, there are great needs for slum clearance and low-income housing; unquestionably, too, the magnitude of these needs is such that some degree of government assistance is necessary. But the amount and kind of government assistance is another matter. If the government should go deeper in debt to finance a mammoth urban renewal and housing program—which might very well be “needed”—it is likely to create more inflation and bring on still greater problems of slums and housing, and a host of other problems as well.

The businessman's quarrel with the so-called liberal is that his propensity for certain types of government action undermines rather than strengthens group and individual self-sufficiency, encourages dependence on authority, and makes recourse to government increasingly necessary in dealing with future problems. He sees in this approach much of the same basic lack of confidence in people, much of the same distrust of spontaneity and obsession with centralization and control, that has been fostered in industry by the worst features of scientific management. He is disturbed at the tendency toward paternalism in persons he suspects of being more the patrons than the compatriots of those they profess to serve, more interested in the aggrandizement of their own status and

power than in the welfare of those for whom they claim to speak.

Somehow or other, the labels "liberal" and "conservative" have become mixed up. To change the metaphor, the cloak of conservatism fits the businessman as poorly as the cloak of liberalism fits many who profess that faith—as though someone had made a mistake in the check room.

FREEDOM AND HUMAN WELFARE

The confusion in terms traces back to an initial confusion about the nature of liberalism. The concept of liberalism embraces two fundamental ideas: the idea of freedom and the idea of concern for human welfare. The idea of freedom has been taken over by business, and the idea of human welfare by groups who are often critical of business. This division was fostered by the ideology of self-interest, which made it difficult for business to admit concern for human welfare even when its actual practice expressed substantial concern. The businessman thus shied away from the label of liberalism because it had been appropriated by others with whom he was often in disagreement and applied to social policies to which he was often strongly opposed. If he was not a liberal, with the meanings that term had begun to acquire, then he must be a conservative—and so he has tried to be, with considerable confusion to all.

But the ideas of freedom and of concern for human welfare cannot be separated with impunity. Neither is complete without the other, and the effort to promote either at the expense of the other results in distortion and monstrosity. The businessman has a commitment to freedom, but he must also be concerned for human welfare. The social reformer has a commitment to human welfare, but in pursuing it he cannot afford to sacrifice human freedom, although in practice he often seems to do so simply because political measures, which are usually the only measures open to him, by their very nature involve elements of coercion and dependency.

On all counts, liberalism is a more suitable philosophy for business than is conservatism. It fits the businessman's innovating role and emphasizes, as conservatism does not, the need for promoting social policies that will preserve and strengthen that role. The humanitarian aspect of liberalism underscores—again, as conserva-

tism does not—the need for constant concern for the human impact of business actions and the obligation of business to serve the long-range public interest. The liberal viewpoint is more likely to encourage the exercise of initiative in recognizing and dealing with problems than is the conservative. Liberalism implies a much stronger faith in the capacities of men and women than does conservatism with its more skeptical bias, and this, too, conforms more closely with the outlook of many businessmen. Not least important, the philosophy of liberalism provides a much more useful framework within which to relate business to the rest of society and to maintain confidence in the integrity and basic good will of business leadership.

LIVING DANGEROUSLY

If the businessman is going to be a liberal, he ought to be a thoroughgoing liberal. If he champions free enterprise, he ought equally to champion freedom in ideas, education, speech, and publication. He cannot afford to support freedom in economic affairs and demand conformity in others.

This means, among other things, that he must be tolerant of points of view other than his own, recognizing that no group has a monopoly on wisdom and that no group fully reflects the interests of all others, however much there may be of fundamental mutuality. Like the essence of the American economic system, the essence of democratic processes is the free interplay of ideas and the integration of varying interests into productive action.

Democracy is a rigorous and demanding form of social organization, as a free market is a rigorous and demanding form of economic organization. Democratic processes and free market processes are seldom neat and orderly; both create feelings of irritation or discomfort among those who like things systematic and predictable. A free economy no less than democracy requires a willingness to let people muddle through, to make mistakes, in the faith that some way, somehow, everything will come out right. Essentially, a free economy requires—as democracy in fact means—a deep faith in people and in the inherent capacity of ordinary men and women to find a means for meeting and dealing with the problems they encounter.

For a democratic system to work, it must be kept in constant

jeopardy. To live democratically is to live dangerously. So too with the economic system. If we set up too many safeguards, if we take too many precautions, we undermine the foundations of both systems. We can preserve democracy, as we can preserve free economic institutions, only by holding them in continuous danger of being destroyed from within—not by their enemies but by their friends, their own citizens who have freedom to act but who must be depended upon to act with judgment and restraint and with proper consideration for the general welfare as well as their own.

FREEDOM — OR SAFETY?

Essential to democracy is the idea of alternatives and freedom to choose between them. Freedom includes freedom to make a wrong or fatal choice. But it also includes freedom to make perhaps a better choice than has ever been made before. Freedom is risky. Democracy is risky. A free economy is risky. But so is mankind. The social life of the ant is much safer than that of man, but that safety is secured at the sacrifice of further growth and development.

Democracy is a process, not a conclusion. Whether in industry or the larger reaches of society, the democratic way is nearly always the hard way. But compared with the authoritarian way, it is only harder in the short run. In the long run it produces better results with fewer complications. Above all it preserves alternatives for dealing with future problems, whereas the implications and consequences of an authoritarian solution severely limit the range of choice for dealing with situations that may arise out of the present one.

These are not matters of abstruse social philosophy; they are highly practical considerations of deep significance to citizens in all walks of life. Thoughtful businessmen will recognize and accept their special responsibility for helping strengthen these essentials of a free society—not simply because it is good for business, but because they themselves are free men. ♦

NOTHING IS DONE. Everything in the world remains to be done or done over.
—Lincoln Steffens

Increasing the Payoff on R&D

(Continued from page 13)

This explosive expansion had several serious and predictable consequences:

1. There was insufficient time in which to select new-product goals intelligently.

2. The handful of experienced personnel who could have added new products to the company's present line were working overtime on equipping and staffing the enlarged laboratory.

3. Research projects, provided hastily for new personnel, tended to be chosen from expediency; they re-ploughed familiar fields and suffered from conservatism and lack of imagination.

4. Personnel, hired hastily and without knowledge of what the company ultimately wanted, proved to have a higher-than-average percentage of mediocre technicians and misfits.

5. Morale, originally high in an aggressive and growing organization, declined as projects proved unpromising, but revived as they were replaced with more worthwhile assignments.

This was a period of exorbitant costs and a level of productivity low by any system of measurement. These somewhat chaotic conditions were substantially corrected during the following year, although much remained to be done in further evaluation of personnel and projects, and some replacement was necessary in both. The department was organized into five research divisions and an engineering and development division which included the pilot plant facilities. A small market research section and a new-product development section was formed, and analytical, library, patent, and shop services were established. The personnel, accounting, and maintenance sections were already performing satisfactorily.

Everyone belonged to a division or section, but no one below division leaders and section chiefs had a defined status, except that the designation of "project leader" was borne by a research worker as long as he was in charge of a project. This did not provide a good background for the more usual forms of recognition, such as promotion, since no grades existed. It was therefore decided by the research management group to devise and install a classification and promotion system, which would also supply bench-marks

for periodic personnel evaluation and provide a definable background for adaptation of the forthcoming multiple management plan.

Four grades were established for professional research personnel—(1) Senior Scientist, (2) Scientist, (3) Associate Scientist, and (4) Assistant Scientist—and three grades for nonprofessional research personnel—(5) Research Assistant, (6) Research Aid, and (7) Laboratory Aid.

THE MULTIPLE MANAGEMENT PLAN

The basic purpose in creating the Associate Management Board plan was to recognize in a democratic way contributions of the individual to the company's research program. It was proposed that the board consist of five members to be elected by the professional research personnel, with two members to be replaced at annual elections. To be eligible for board membership, a candidate must have been in a professional grade in the organization for at least two years. Not more than two members could serve from the same division. Members of the research management group, including division and section leaders, were ineligible to vote or to hold office. All research personnel in professional grade for at least one year were eligible to vote.

To form the first board, a primary election was held, following the posting of the names of all qualified voters and also of those qualified to serve on the board. The ten names receiving the highest number of votes in the primary election were candidates in a final election, and the five names receiving the most votes were declared to be the Associate Management Board (AMB).

The Associate Management Board elects its own chairman and secretary. Minutes are open only to members of the board and the Administrative Committee. Meetings are held at the call of the chairman. Prior to the annual election, board members rate each other on a secret written ballot leading to a numerical score, ballots are tallied by the R&D director, and the names of the three receiving the highest ratings are reported to the board, to continue in office for the ensuing year. The other two members are replaced by popular election. No member is eligible to serve more than three years continuously. Interim vacancies are filled by board appoint-

ment of the eligible candidate who received the next highest number of votes in the last election.

FUNCTIONS OF THE BOARD

The functions of the AMB were described in by-laws promulgated by the company's Administrative Committee. In essence, they provided that the junior board would:

- Submit to the Administrative Committee recommendations with respect to the promotion of a research worker, but only when unanimous;
- Consider promotion cases only when received from the appropriate division or section leader, who would submit his recommendations for promotion to the AMB;
- Consider appeals formally submitted by any research worker with respect to his classification.

The Administrative Committee for its part undertook to acquaint the AMB with its reasons in the event it disapproved a recommendation, and also to give full consideration to unanimous recommendations for changes in the by-laws. All practicable assistance was assured to the board in collecting data needed for its deliberations.

Except as its counsel might be sought on other matters by the Administrative Committee, the primary duty of AMB was to act on recommendations for promotion. This facilitated and contributed directly to the functioning of the classification system and its capacity for affording recognition for achievement. It also served as a limitation on the board's initial powers, to minimize the risk that this innovation in management might be regarded as a wholesale delegation of responsibility to an employee committee. Salary increases continued to be the exclusive responsibility of the Administrative Committee, which took into account recommendations of the division head, some of which originated with promotions that resulted from AMB action. Despite these initial restrictions on AMB powers, it was hoped that board performance might ultimately warrant their extension to consideration of other laboratory problems.

The first year of Associate Management Board activity gave evidence that this management device was proving eminently workable. Research personnel tended to elect to the board mature men

with professional ability and qualities of leadership, despite the fact that 80 per cent of the qualified voters were in the two lower grades, and they might theoretically have elected a board consisting of five assistant scientists. This reflected a natural inclination on the part of the voters to entrust their futures to men in whom they could place confidence. It was also an indication of the importance they attached to the AMB.

The thoroughness and conscientiousness with which the board examined nominees for promotion dispelled any fears that it would treat its duties lightly or foster wholesale promotion. Successful candidates valued the approval of their associates on the board, and the recognition that went with promotion was enhanced.

Board members gained an insight into some of the problems that confront management. Although they had no authority, they were frequently sought out unofficially and individually with questions, ideas, or just plain gripes that would be unlikely to reach higher levels. It was easier to talk to them than to the boss, and in the process people got some things off their chests instead of keeping them bottled up.

All evidence indicated that board members maintained an atmosphere of dignity and good taste in their meetings, conducted themselves with propriety outside of board meetings, and did not reveal confidential business of the board.

BROADER DUTIES

Perhaps the most significant development from the first year's operation of the plan was a request from the Associate Management Board that the by-laws be amended to permit them to give consideration to other laboratory problems. The examples cited by the board revealed that the members were beginning to think in terms of the organization as a whole. Voluntary participation in the role of management was beginning to appear, at least on the part of the five board members, and perhaps indirectly by their associates who had talked with them and whom they represented.

Subjects that the board requested permission to consider included:

- Assistance in after-hours educational plans
- Attendance at scientific meetings
- Methods for screening new ideas

- A more effective suggestion system
- Study of various supplementary forms of recognition, including prizes and research fellowships
- Sponsoring of visiting lecturers

In view of the board's good record and general acceptance, the Administrative Committee, with the approval of the company's Executive Committee, amended the by-laws to include this statement under "Purposes and Duties":

"The AMB shall, on its own initiative, present to the Administrative Committee such proposals of any kind and nature for the good of the R&D department and the company as have been carefully weighed by the AMB and are considered unanimously by the AMB to be constructive and of sufficient merit to warrant serious consideration."

THE SECOND YEAR

During the second year of the Associate Management Board plan, the department instituted a number of additional forms of recognition, educational benefits, and privileges, and further provision for consideration of suggestions and new ideas. Some of these were initiated by the AMB; others evolved as a result of joint conference with the Administrative Committee. Among these were:

- Establishment of an annual research prize, including a cash award of \$1,000.
- Appointment to a three-months' visiting fellowship at a university laboratory under an authority in the candidate's field of specialization.
- Establishment of three "senior research associates" in the research department, carrying with them freedom of choice of basic research and other privileges.
- Provision of a fifteen-week course in statistical analysis at the laboratories outside of business hours, under the tutelage of a professor and leader in this field who was brought in for the purpose. (Forty-five of the staff signed up for the course, paying \$60 apiece as tuition, refundable on completion of the course.)
- Provision of a series of monthly dinners at the laboratory, followed by an illustrated lecture by a distinguished scientist; employees were privileged to bring their families.

Later in the second year of the Associate Management Board plan, further evidence was forthcoming that the plan was succeeding in strengthening relationships between personnel at different levels, improving communications and understanding, and raising morale throughout the organization. The AMB requested permission to bring a few representatives of the nonprofessional personnel to a joint conference with the administrative committee. The latter group included about 50 technical personnel of subprofessional grade, as well as office, accounting, purchasing, maintenance, and shop workers—a total of about 90 additional men and women.

The chairman of the AMB explained that representatives of the nonprofessional personnel had come to the board to ascertain its opinion on the possibilities of bringing the "supporting services" under the AMB plan, and he recommended that the question receive the Administrative Committee's earnest consideration. The Administrative Committee agreed to take the request under study, and asked the AMB to assist in devising an appropriate extension of the present system.

THE EXPANDED PLAN

The expanded plan that was developed divided all nonprofessional personnel into three major service groups, described collectively as "supporting personnel":

1. Technical personnel, up to and including research assistants.
2. Maintenance personnel, including shop and stockroom workers, janitors, and cafeteria employees.
3. Office workers, including secretarial, accounting, purchasing, personnel, and library employees not elsewhere classified.

Those who had been with the department for at least one year were eligible to vote for nominees who would be chosen by popular vote from an eligible list of personnel having not less than two years of service with the department. Three additional members of AMB were authorized from supporting personnel, with not more than two from any one major service group, and one of the three would be replaced annually. Each member of the expanded board would rate all other (seven) members, but in tabulating ratings, each professional member's rating of the other professional members would be assigned double value, as would each nonprofessional

member's rating of the other nonprofessional members. Proceedings of the board pertaining to the promotion of a professional research worker would be participated in only by the five professional research personnel members, and their unanimous recommendation would in such instances suffice to support a recommendation from the AMB to the Administrative Committee.

Research workers now had a voice through their elected representatives on the Associate Management Board in these areas:

- Selection of supervisors (through promotions).
- Recognition, through promotions and other forms recommended by the AMB.
- Selection of research projects.

The nonprofessional personnel had a voice through their elected representatives in two areas:

- Selection of supervisors.
- Recognition.

Promotion to the top grade of Senior Scientist was handled under a by-law by convening a special joint session of the AMB and all Senior Scientists, the latter group numbering about twelve. If not more than one Senior Scientist cast a dissenting vote, recommendation by AMB for approval was automatic; if two Senior Scientists voted against approval, the recommendation was left to AMB action; if three (or more) Senior Scientists voted against approval, no recommendation was reported. As with all recommendations from AMB, the final decision rested with the Administrative Committee.

RESULTS OF THE PLAN

After three years, evaluation of the progress of the R&D department revealed several characteristics in which improvement could be noted with comparative objectivity. For this new department, 90 per cent of which was less than five years old, estimates of progress were necessarily qualitative, and it was often difficult to attribute improvements to a specific cause or influence. Some progress might well have resulted from the normally conscientious efforts of management to build and strengthen a new organization.

Furthermore, the initiation and adoption of the Associate Management Board plan not only emphasized management's sympathetic and constructive interest, but also focused attention on the indivi-

dual and stimulated awareness of human relations. Since the implications were clearly favorable to the employee, his response could be a product of this interest, rather than a direct result of the plan itself.

Nevertheless, it is possible to see concrete evidence of improvement in several areas, and there is no doubt that much of it is attributable, either directly or indirectly, to the AMB plan.

Better Morale

Good morale, while difficult to evaluate quantitatively, is easily recognizable. Supervisors reported a gradual but definite improvement in the morale of the research workers following institution of the classification system and the AMB plan, as evidenced by type of response elicited in daily contacts. Inquiries were met with more positive expression, more initiative, and more enthusiasm. There was a general atmosphere of alertness and of greater interest in work. Supervisors found definite evidence of improved morale in the course of the semiannual interviews held with each employee privately.

Better Motivation

Evidences of better motivation included a significant increase in the number of professional personnel enrolling in extension courses at neighboring colleges and availing themselves of opportunities for self-improvement offered outside of working hours at the laboratory. More papers were written and submitted for approval for transmittal to scientific journals, and greater interest in work was evidenced by more voluntary overtime work at night and on week-ends.

Perhaps most significant of all, more new products came out of the laboratories. During the three years following initiation of the AMB plan, the number of new products reaching advanced development stages rose from one the first year to five the second year—and it reached 22 the third year.

Improved Communications

Better communications were developed between management and research personnel, both directly through the AMB and as an indirect consequence of AMB activity. The semiannual personal interviews indicated that the improved communications had resulted

in a better understanding of the R&D mission and of company goals, as well as increasing the effectiveness of the interviews themselves.

Improved Management Practices

Informal discussion with the AMB, as well as the board's formal recommendations, aided the company in correcting certain practices which, unknown to management, had been sources of friction. Among these practices were the method of keeping attendance and punctuality records; the practice of providing inadequate explanations for dropping a project or failing to draw a patent application; the lack of qualified professional men in the personnel section to deal with individual problems of technical personnel; and the excess of red tape in drawing expendable supplies.

More Attractions for New Personnel

Whether or not the fact is attributable to effectiveness of the AMB plan is not easy to determine, but it gradually became easier to attract top-quality new personnel to the organization.

Improved Development of Leaders

Benefits which would seem to be clearly attributable to the AMB plan were the recognition by board members of some of management's responsibilities in an R&D department; the development of leadership qualities; and the emergence of some of the members as potential future supervisors.

More Benefits for Supporting Personnel

Bringing nonprofessional personnel under the AMB plan, according to their own supervisors, made them feel "on the team," improved cooperation and performance, reduced delays, and gave them a better understanding of the purpose of the work they were called on to assist.

RAISING R&D PRODUCTIVITY

The Associate Management Board did not in any sense supplant or replace management in the performance of any of its functions or duties, since the only action the board could take was to submit its recommendations to management. It did, however, supplement

the information available to management and provide another point of view, enabling management to make better decisions.

Although the AMB could submit recommendations for the initiation or modification of research projects, it undertook little or no activity of this sort. Probably the existence of an active Project Committee (which included all division leaders and certain staff members) and a Suggestion Committee left little for the AMB in this area. Another reason might be the requirement that all recommendations from the AMB be unanimous. Some of the members might have felt that they were not qualified to vote on many recommendations of this kind.

The Associate Management Board plan afforded an opportunity for R&D personnel to participate constructively in some of the decisions of management that most closely concerned them, and, judging from the advantages that accrued to this company, it would appear to be an eminently suitable approach to the problem of creating a favorable climate for maximum R&D productivity. ♦

AUTHOR'S NOTE: Dr. Charles D. Flory, General Partner of Rohrer, Hibler, & Replogle, has consulted for the past 15 years at McCormick and Co. He is thoroughly familiar with that company's multiple management plan and contributed in a major way to the adaptation of the plan described in this article.





SURVEY OF BOOKS FOR EXECUTIVES

LANDMARKS OF TOMORROW. By Peter F. Drucker. Harper & Brothers, New York, 1959. 270 pages. \$4.50.

*Reviewed by Leo Teplow**

Peter Drucker's imaginative, provocative exploration of the world of today and tomorrow stems from a scholarly background combined with a fertile, untrammelled mind. His extensive familiarity with industrial organization, coupled with his realization that change means a departure from the habits and goals of the past, enables him to penetrate into the real problems we face now and in the future.

In *Landmarks of Tomorrow*, Drucker begins by pointing out that the New World View requires quite a different philosophy from that which has guided Western thinking for the past 300 years. For instance, the assumption that measurement and identification are enough to lead to scientific understanding of the world no longer holds. A new concept of the world about us is being born, based not so much on cause and effect as on an effort to understand the basic processes of develop-

ment, growth, and decay. Purposeful organization and scientific research have led to a world entirely different from that to which we are accustomed, requiring new approaches, new goals, new philosophies.

Not so very long ago, human progress was believed to be inevitable—as men learned more about natural law and developed more horsepower per person, it seemed that continued progress was virtually assured. But the realization that progress is *not* inevitable, that evil *can* triumph, has changed what used to be haphazard progress to *purposeful innovation*—the hallmark of the world of today and tomorrow. This innovation, says Drucker, is a new view of man's role in the universe, based on creating order by taking risks. Not an assertion of human power, it is rather an acceptance of human responsibility.

Purposive innovation, then, means more than technological research and development. It means that the major institutions men have built—the school, the church, the state, the professional association—are being converted from static, tradition-bound instruments into means whereby desired changes are being wrought. Recognizing our responsibility to anticipate, control, and direct change

* Industrial Relations Consultant, American Iron and Steel Institute.

through social as well as technological innovation, we now select the areas of ignorance, direct research into those areas, and thus organize advancement in the desired direction.

It should not be forgotten, however, that purposive innovation in the social field can and must accomplish a great deal more than innovation in technology or production. In fact, the social and technical fields are becoming more closely joined than they have ever been before; so much so that the society of the future, according to Drucker, will result from a purposive social innovation rather than from reform or revolution.

Implicit in this innovation are serious risks—those of success often being as great as those of failure. Wholesale failure may be avoided, however, by planning on a local rather than on a centralized level. Consequently, the functions of a central government in this respect must be limited, as should centralized decision-making in large corporations.

A new kind of organization is required, therefore, to initiate and carry out purposive innovation. Drucker deals with this—his favorite subject—in a chapter entitled "Beyond Individualism and Collectivism." The New Order, he states, will consist mainly of large business organizations that bring together the many skills, arts, and professions necessary to their operation. Indeed, a new society consisting largely of middle-class professionals is already being created by these organizations of managerial skills. The major problem is how to incorporate, motivate, and inspire these people to work for the welfare

of the organization and society, while at the same time giving them a maximum degree of freedom so that they can make their most responsible contributions—either by remaining where they are or by moving to new fields.

The new post-modern world demands some wide changes: a highly educated society, rapid economic development of industrially underdeveloped countries, new political institutions to replace the outmoded concept of national sovereignty, and cultural development to replace the vacuum left by the climactic changes in Africa and Asia. This is the burden of most of Drucker's *Landmarks of Tomorrow*.

Probably the best chapter in the book is the one on "The Educated Society." In it, Drucker points out that the highly educated man has become the central resource of today's society and that the supply of such men is the true measure of any society's economic, military, and even political potential. "Productive work in today's society and economy is work that applies vision, knowledge, and concepts—work that is based on the mind rather than on the hand." Thus, education, says Drucker, is "the most advanced form of capital investment today."

Emphasizing that the lack of educated people is the greatest void in underdeveloped countries, Drucker suggests that helping these countries to build education is, perhaps, more important than helping them build armies or steel mills or even improving their agriculture.

Such development of underdeveloped countries is an example of

purposive innovation. Now that the people of these countries have their sights on a plentiful economy in the not-too-distant future, great forces will be mobilized to achieve it. But this is not so novel as we are likely to assume—though the Soviet example is uppermost in our minds today, Japan undertook its amazingly successful effort to achieve industrialization at a speedier rate, with less natural resources and no great land areas to exploit, nearly 100 years ago.

This brings us back to our original premise: the chief resource of any country is its people. Therefore, if business organizations have the greatest know-how in organizing people to achieve economic goals, American business organizations have the most to contribute in providing leadership by example in the countries on which the future of the world depends.

Another chapter, aptly entitled "Modern Government in Extremis," treats the political crisis in the post-modern world. Just when the necessity of limiting the power of central government is best understood, chronic world crisis forces ever more functions and authority on the central government; while local governments have demonstrated their incapacity to deal with the multiplying problems of the modern metropolis. The solution, says Drucker, lies in the direction of political pluralism: government by countervailing powers under the rule of law.

In a chapter on "The Vanishing East," Drucker notes that industrialization is a peculiarly Western phenomenon, growing out of Western culture, traditions, and institutions.

Consequently, the impact of industrialization on the East has been explosive, destroying the old institutions. What is to fill that vacuum? The kinds of institutions now arising in the countries being industrialized may well determine the kind of world in which our children will live.

In the last analysis, Drucker concludes that our greatest danger lies in our tendency to face the problems of tomorrow with the assumptions, goals, and standards of yesterday. We must recognize that we are part of a new world before we can ask the right questions, seek the right answers, set the right goals. The crisis of the Free World is a crisis of vision and understanding, of leadership and realism.

The real objective, as Drucker sees it, is not the negative one of merely fighting Communism, but rather the positive and constructive one of helping the new world come into being. "The problem," he says, "is not selfishness but failure to realize where self-interest has come to lie. It is not evil designs but well-meaning mediocrity. It is not ignorance but failure to act on our knowledge."

In a postscript chapter, "The Human Situation Today," Drucker notes that, for the first time, mankind has probed successfully into the basis of life, matter, and energy, as well as achieving the ultimate power of total destruction. "Knowledge is power, and power is responsibility." Can we develop the urgent sense of responsibility that such great power demands?

Landmarks of Tomorrow is a book that every thoughtful businessman can read with profit. While Drucker

may be an uneven writer, it cannot be denied that, at his best, he is a brilliant and provocative thinker—one who refuses to be bound by standard assumptions, and sheds light if not conviction on many major issues. His is a many-faceted mind, which sparks lively reaction (though not necessarily agreement) from the reader. His writing is salted with wit and pervaded with a basic morality—a persuasive sense of personal responsibility—from which managers of business and other leaders may well benefit.

BUSINESS AND RELIGION.

Edited by Edward C. Bursk.
Harper & Brothers, New York,
1959. 121 pages. \$4.00.

*Reviewed by Moorhead Wright**

Even as recently as 15 years ago, it would have been highly unlikely for this book—a compilation of 12 articles on ethical business practice culled from the *Harvard Business Review*—to have been published. Its publication now is not only a significant commentary on our times, but also a positive attestation to the growing need among managers for guidance in integrating their religious beliefs with their everyday business activities.

Gone are the days when the manager's purpose was simply to maximize profit for the owner of the business. The pervading influence

of the corporation on our culture has greatly magnified and even revised his mission. Peter Drucker has gone so far as to say that the responsibilities of today's business manager are moral, social, and economic—in that order.

But such obligations are not easy to meet—the manager must be well fortified both mentally and spiritually. In part, he has solved his dilemma by going back to school, as the success of the numerous management courses now being conducted for businessmen amply demonstrates. But in his tentative reachings toward spiritual guidance, he all too often finds that his religious training is either inadequate or totally unrelated to his workaday problems. Of course, the gap between business and religion is a traditional one and, therefore, not easily overcome. However, if we are to bridge that gap—as I believe we must—this book is an important first step in the right direction. In fact, if its only effect is to make managers realize that business and religion are compatible, it will have well served its purpose.

In the directness of their approach to the underlying theme of *Business and Religion*, the individual articles vary widely. Indeed, they range in subject matter from "enlightened personnel policy" to theological doctrine. Among the authors are the general manager of a food chain, motivation researcher Ernest Dichter, and the distinguished theologian, Reinhold Niebuhr, who is often very critical of the businessman.

One of the most cogent chapters is contributed by Professor Kenneth E. Boulding of the University of

* Personnel Development and Educational Relations, General Electric Company, Ossining, New York.

Michigan, who writes from a background of much research and thought. Another is O. A. Ohmann's famous "Skyhooks" piece, which has the distinction of being the most widely reprinted article ever published in the *Harvard Business Review*. Temperate though this article was in its approach, it actually elicited much controversy on its original appearance, as well as a great deal of praise and endorsement. To judge from these comments (some of which

are included in the book), the reconciliation of business and religion will be no easy task.

Aside from the value of *Business and Religion* to the individual reader, it should serve equally well as the basis for a series of seminars or meetings for group discussion. All in all, it constitutes a valuable addition to business literature, one that may well bear out its claim to represent "a new depth dimension in management."

Briefer Book Notes

(Please order books directly from publishers)

FOREIGN OPERATIONS

MANUAL ON THE FOREIGN LICENSE AND TECHNICAL ASSISTANCE AGREEMENT. By Joseph S. Cardinale. Thomas Ashwell & Company, Inc., New York, 1958. 128 pages. \$12.50. The first of a proposed series of handbooks dealing with various phases of international business from the point of view of U.S. businessmen, this manual covers the factors involved in considering and establishing a foreign license program and the negotiation, preparation, and servicing of the contractual arrangements.

THE EXECUTIVE OVERSEAS: Administrative Attitudes and Relationships in a Foreign Culture. By John Fayerweather. Syracuse University Press, Syracuse, N. Y., 1959. 195 pages. \$4.00. Having determined, through first-hand observation and personal interviews, that the major problems in relations between American executives and those of other nations arise from differences in cultural attitudes, the author discusses the various aspects of these attitudes affecting the administrative process. Case histories of actual administrative situations are used throughout.

THE ROLE OF MIDDLEMAN TRANSACTIONS IN WORLD TRADE. (Occasional Paper 64.) By Robert M. Litchenberg. National Bureau of Economic Research, Inc., New York, 1959. 86 pages. \$1.50. Defining the international middleman as "a resident of a third country who assumes control, beyond that of a carrier or financial agent, of a commodity moving between the country of production and the country of consumption," the author examines (1) the magnitude of middleman trade in relation to the total imports of seven countries—Germany, Denmark, Norway, Sweden, Finland, Yugoslavia, and Colombia; (2) the relative magnitude, structure and trends of three particular aspects of middleman trade; and (3) some general implications of middleman trade for interpreting international trade statistics.

THE COMMUNIST WORLD AS CUSTOMER AND COMPETITOR: A Special Study. Business International, New York, 1959. 30 pages. \$36.00. Discusses the size of the Communist market for various industries, the difficulties and dangers in exploiting that market, the threat of the Soviet "trade offensive" in the Middle East, Asia, Africa, and Latin America, and how private industry and free world governments can counter that threat. The study is designed to help executives outline future programs of increased sales to the Communist market and protect themselves against competition by the huge state trading agencies of the East.

EXPROPRIATION IN PUBLIC INTERNATIONAL LAW. By B. A. Wortley. Cambridge University Press, New York, 1959. 169 pages. \$5.50. Treating the public international law aspects of confiscation, expropriation with or without adequate compensation, and nationalization, the author endeavors to reconcile the conflicts which may arise between the principles of municipal law and those of international law in such situations. A number of relevant cases arising out of a clash of claims to property are cited.

TAX INCENTIVES FOR INDUSTRY IN MEXICO: A Report of a Study Carried Out in Mexico During the Summer of 1958. By Stanford G. Ross and John B. Christensen. Law School of Harvard University, Cambridge, Mass., 1959. 256 pages. \$3.50. This report on a study conducted by the Harvard Law School International Program in Taxation reviews the industrial development of Mexico, analyzes the major factors—governmental and non-governmental—that, in addition to tax exemption, have promoted this development, and discusses the tax exemption program itself from the standpoint of its legislative development over the years. The economic effects of the program are also analyzed.

1959 CANADIAN TRADE INDEX. The Canadian Manufacturers' Association, Toronto, Canada, 1959. 1071 pages. \$12.50. This listing of over 11,000 manufacturing firms constitutes a complete guide to Canadian manufacturers having more than a local distribution for their products. Products are classified under some 10,000 different headings.

COMMON MARKET—ECONOMIC FOUNDATION FOR A U.S. OF EUROPE. By Thomas D. Cabot. Committee for Economic Development, New York, 1959. 28 pages. 50 cents. Presents, in brief form, the substance of the statement on national policy issued by the Research and Policy Committee of the CED in May, 1959: "The European Common Market and Its Meaning to the United States."

FINANCING FOREIGN OPERATIONS: Sources of Capital for U.S. Trade and Investments. (AMA Management Report No. 23.) International Management Division, American Management Association, Inc., New York, 1958. 163 pages. \$4.50. (AMA members, \$3.00.) Based on material originally presented at an orientation seminar held by AMA's International Management Division in 1958, this report is designed to acquaint the U.S. businessman interested in foreign trade and investment problems with the nature and extent of the services and funds available to him from the U.S. Government, a number of international lending agencies, and the various branches of the private money market.

AMA CONFERENCE CALENDAR

OCTOBER-NOVEMBER, 1959

<u>DATE</u>	<u>CONFERENCE</u>	<u>LOCATION</u>
October 7-9	SPECIAL RESEARCH AND DEVELOPMENT CONFERENCE: Planning for Growth	Biltmore Hotel New York
October 14-16	SPECIAL FINANCE CONFERENCE: Financial Planning for Greater Profits	Roosevelt Hotel New York
October 21-23	ANNUAL OFFICE MANAGEMENT CONFERENCE: Advances in Office Management Practices—Past, Present, and Future	Roosevelt Hotel New York
October 26-28	SPECIAL MANUFACTURING CONFERENCE: Distribution Management	Roosevelt Hotel New York
November 2-4	GENERAL INSURANCE CONFERENCE	Drake Hotel Chicago
November 23-25	SPECIAL RESEARCH AND DEVELOPMENT CONFERENCE: Capitalizing on Technology	Ambassador Hotel Los Angeles

To register or to obtain additional information on any of the conferences listed above, please contact Department M10, American Management Association, 1515 Broadway, New York 36, N.Y.

